

Articles

The Boundaries of Private Property

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[L]egislators cannot invent too many devices for subdividing property, only taking care to let their subdivisions go hand in hand with the natural affections of the human mind.

—Letter from Thomas Jefferson to James Madison, 1785¹

I. INTRODUCTION

If your house and fields are worth more separately, divide them; if you want to leave a ring to your child now and grandchild later, split the ownership in a trust. The American law of property encourages owners to subdivide resources freely. Hidden within the law, however, is a boundary principle that limits the right to subdivide private property into wasteful fragments. While people often create wealth when they break up and recombine property in novel ways, owners may make mistakes, or their self-interest may clash with social welfare. Property law responds with diverse doctrines that prevent and abolish excessive fragmentation and keep resources well-scaled for productive use.² Recently, however, the Supreme Court has begun assigning a private property label to an increasing range of fragments.³ By protecting too many fragments, the Court paradoxically undermines the usefulness of private property as an economic institution and constitutional category.⁴

The danger with fragmentation is that it may operate as a one-way ratchet: Because of high transaction costs, strategic behaviors, and cognitive biases, people may find it easier to divide property than to

1. 8 THE PAPERS OF THOMAS JEFFERSON 682 (Julian P. Boyd ed., 1953).

2. This Article focuses on resources usually exchanged through markets, rather than on resources such as human bodies or political votes, for which commodification is even more contested or rejected. See Susan Rose-Ackerman, *Inalienability and the Theory of Property Rights*, 85 COLUM. L. REV. 931, 932 (1985) (“[S]ome forms of inalienability . . . have valid public policy justifications in a democratic market society.”). See generally Margaret Jane Radin, *Property and Personhood*, 34 STAN. L. REV. 957 (1982) (developing an anti-commodification theory).

3. See, e.g., *Phillips v. Washington Legal Found.*, 118 S. Ct. 1925, 1934 (1998) (holding that interest accrued in a lawyer’s trust account is the client’s property, even though the amount involved is so small as to have no net economic value to the client); *Hodel v. Irving*, 481 U.S. 704, 717 (1987) (holding the “right to devise” low-value fractionated Native American allotted lands to be private property); see also Michael A. Heller & James E. Krier, *Deterrence and Distribution in the Law of Takings*, 112 HARV. L. REV. 997 (1999) (challenging the Court’s approach in *Phillips* and *Hodel*).

4. Promoting efficient market exchange is not the only purpose of any property rights system or of takings jurisprudence. Justificatory debates always lurk in the background of property analysis, but they fall outside the explicit focus of this Article. See, e.g., *Phillips*, 118 S. Ct. at 1933 (noting the Court’s “longstanding recognition that property is more than economic value”); JEREMY WALDRON, *THE RIGHT TO PRIVATE PROPERTY* (1988) (exploring justifications for private property).

recombine it.⁵ If too many people gain rights to use or exclude,⁶ then bargaining among owners may break down. With too many owners of property fragments, resources become prone to waste either through overuse in a commons⁷ or through underuse in an anticommons.⁸ In well-functioning property regimes, legislatures and courts prevent such waste by drawing boundaries that constrain owners' choices about fragmentation. Outside the boundaries are commons and anticommons property; inside are forms of private property. I intend the "boundary principle" to refer to the legal doctrines that separate these property categories from each other and help to keep resources well-scaled for productive use.

The boundaries among different ownership forms can be usefully understood with reference to Figure 1. The thick vertical lines in Figure 1 represent the range of private property forms available in a well-functioning society at any given time.⁹ Outside one boundary, in an open-access commons, many people own valuable rights to use a resource, such as fishing the ocean or polluting the air. Property law has traditionally treated these rights as non-private property and abolished them without compensation when necessary to overcome a tragedy of the commons. Outside of the other boundary, in a full-exclusion anticommons, many people own valuable rights to exclude others from a resource.¹⁰ Paralleling the commons example, property law may also view such rights to exclude

5. The market failure problem is asymmetric. If a government allows too little fragmentation, then fixing public policy may be enough: Owners can subdivide property through market exchanges. However, once a government allows too much fragmentation, bargaining failures may prevent market consolidation. *See, e.g.,* Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 SCIENCE 698 (1998) (arguing that mistakes in biomedical patent policy may create too many fragmented rights and result in too few life-saving innovations).

6. This Article will follow the colloquial usage of "rights to use" and "rights to exclude." The Hohfeldian privilege/right terminology is more precise but obtuse. It offers little additional analytical traction in this context. *See* WESLEY NEWCOMB HOHFELD, *FUNDAMENTAL LEGAL CONCEPTIONS AS APPLIED IN JUDICIAL REASONING AND OTHER LEGAL ESSAYS* 96-97 (Walter Wheeler Cook ed., 1923).

7. *See* Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243, 1244-45 (1968) (introducing the metaphor of the "tragedy").

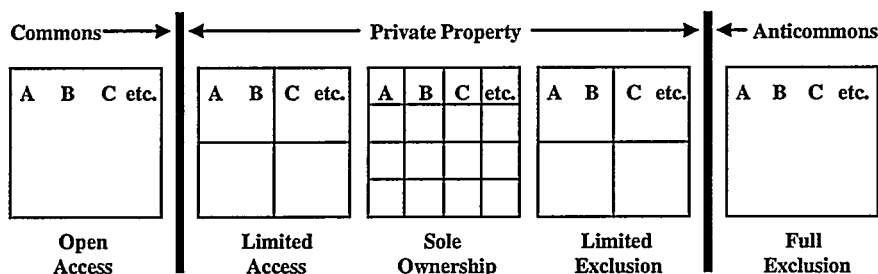
8. Anticommons property is most easily understood as the mirror image of commons property. Readers unfamiliar with the idea of the anticommons should skip ahead to Section III.B for a brief introduction or see Michael A. Heller, *The Tragedy of the Anticommons: Property in the Transition from Marx to Markets*, 111 HARV. L. REV. 621, 622-25 (1998), which introduces the anticommons as a new tool for property theory. *See also id.* at 667-68 (tracing the anticommons idea to Frank I. Michelman, *Ethics, Economics and the Law of Property*, in NOMOS XXIV: ETHICS, ECONOMICS, AND THE LAW 3 (1982)).

9. The contours of these ownership forms shift subtly with legal, social, and technological changes. Changes in formal law and informal institutions interact in unpredictable ways to affect property boundaries. *See, e.g.,* Lisa Bernstein, *Opting out of the Legal System: Extralegal Contractual Relations in the Diamond Industry*, 21 J. LEGAL STUD. 115 (1992) (discussing the connections between formal law and informal norms among diamond merchants).

10. A full-exclusion anticommons occurs relatively infrequently in mature property rights systems. *See* Heller, *supra* note 8, at 667-69. The category of limited-exclusion anticommons property provides more salient examples.

as non-private and abolish them without compensation when necessary to avoid an anticommons tragedy.

FIGURE 1. THE BOUNDARIES OF PRIVATE PROPERTY



The interesting cases for modern property theory, private law development, and constitutional inquiry bump up against these property boundaries in Figure 1. In both a limited-access commons¹¹ and a limited-exclusion anticommons,¹² discrete groups of owners can use or exclude others from a valuable resource.¹³ The dynamics of rules bounding fragmentation are a relatively little-analyzed, real-world problem, particularly for what I call the “property governance” regimes emerging on the commons and the anticommons ends of the property continuum. The traditional image of private property as comprising sole ownership,¹⁴ a

11. See Carol M. Rose, *The Several Futures of Property: Of Cyberspace and Folk Tales, Emissions Trades and Ecosystems*, 83 MINN. L. REV. 129, 129-33 (1998) (identifying a range of limited-access commons regimes).

12. Rose argues that the future of property theory appears in limited-access commons regimes with complex internal governance rules. See *id.* at 132. I agree, but would add that limited-exclusion anticommons regimes may pose even more vexing boundary opportunities and problems for legislators, courts, and theorists. In conversation with colleagues, I have learned that examples of limited-exclusion anticommons property are numerous: Sam Issacharoff notes bottlenecks in microchip production; Howell Jackson suggests attention to demutualization in the savings-and-loan and insurance industries; Jeff Lehman identifies examples in asset securitization, real estate investment trusts, and the Superfund program.

13. Consider two people who are tenants in common of a farm—each cotenancy is itself private property. To avoid overuse when owners’ preferences conflict, property law interposes a nonwaivable “right to partition.” See JOHN E. CRIBBET & CORWIN W. JOHNSON, *PRINCIPLES OF THE LAW OF PROPERTY* 114 (1989) (discussing partition). However, when too many co-owners share a farm, physical “partition in kind” can lead to uneconomically small lots and underuse. Judges prevent underuse by favoring “partition by sale” over “partition in kind,” by dividing money rather than land among co-owners. See, e.g., *Johnson v. Hendrickson*, 24 N.W.2d 914, 916 (1946) (“[D]ivision of this quarter section of land . . . into four or more separate tracts would materially depreciate its value, both as to its salability and as to its use for agricultural purposes.”).

14. As Michelman notes, the conventional definition of private property requires that the rules “must allow that at least some objects of utility or desire can be fully owned by just one person. To be a ‘full owner’ of something is to have complete and exclusive rights . . . over it.” Michelman, *supra* note 8, at 5.

familiar type of ownership at the center of Figure 1, will hardly be relevant in the discussion that follows.¹⁵

The main goals of this Article are to identify the boundary principle at the core of private property and to show how this principle challenges takings doctrine. Part II ranges across the Anglo-American law of property to define the boundary principle. Boundary rules are not oppressive or paternalistic constraints on private property, nor are they a disconnected "jumble of techniques aimed at making land more marketable."¹⁶ Rather, they are intrinsic to and constitutive of well-functioning private property regimes. Part III situates the boundary principle in a theoretical framework. Property scholars have discussed aspects of the boundary principle at a systemic and doctrine-specific level, but none have identified its central role in preventing tragedies of the commons or anticommons.¹⁷ If the possibility of sole ownership is a formal element of private property, then the boundary principle is its real world corollary. Part IV shows how the boundary principle can be used to examine constitutional decision-making regarding property fragments. To the extent the Court shapes its takings jurisprudence from an efficiency perspective, the Justices should consider the boundary principle's wealth-maximizing effects. By overprotecting fragments, the Court ensures anticommons waste without articulating countervailing values and confronting the tradeoffs these values demand.¹⁸

15. Sole ownership is an ideal type, never reached in practice. Wherever the term appears in this Article, it always assumes a thicket of restrictions limiting absolute dominion. *See generally* Robert W. Gordon, *Paradoxical Property*, in *EARLY MODERN CONCEPTIONS OF PROPERTY* 95, 95 (John Brewer & Susan Staves eds., 1995) [hereinafter *EARLY MODERN CONCEPTIONS*] (discussing the restrictions present in Blackstone's time); Carol M. Rose, *Canons of Property Talk, or, Blackstone's Anxiety*, 108 *YALE L.J.* 601, 603 (1998) ("Blackstone himself was thoroughly aware of [the] pervasive and serious qualifications on exclusive dominion."). Water is equally a fundamental resource, but it is usually embedded in a limited-access commons regime. *See id.* at 625; *see also* Carol M. Rose, *Property as the Keystone Right?*, 71 *NOTRE DAME L. REV.* 329, 351 (1996) (comparing the effects of land and water metaphors on property law). Perhaps sole ownership emerged as the private property paradigm because of land's status as "the central metaphor for property itself." Rose, *supra* note 11, at 136.

16. PAUL GOLDSTEIN, *PROPERTY* 605 (1985).

17. The economic aspect of the "boundary principle" may be most readily defined by reference to Michelman's description of "constraints on decomposition" in private property regimes. *See* Michelman, *supra* note 8, at 15-20. As often happens, Michelman's theoretical lead is precise and indispensable. Nevertheless, the idea of "constraints on decomposition" suggests the mechanism but not the effect or real world extent of the boundary principle. *See infra* Section III.C (discussing and distinguishing Michelman's theory).

18. Competing goals could range from libertarian to redistributive. *See, e.g.*, Richard A. Epstein, *Notice and Freedom of Contract in the Law of Servitudes*, 55 *S. CAL. L. REV.* 1353, 1359 (1982) (rejecting boundary rules because they impose a "collective vision" that limits owners' ability to further values they prefer); Hanoch Dagan, *Takings and Distributive Justice*, 85 *VA. L. REV.* (forthcoming Sept. 1999) (exploring distributive justice perspectives on takings law). I do not mean to give short shrift in this Article to the many social values that may underlie fragmentation rules. On the contrary, I hope that pointing out the conflicting understandings of efficiency embedded in the common law and in the Court's takings jurisprudence will encourage judges and commentators to focus more precisely on what these social values are and on how much they are worth to us. If I am right, then the economically-minded members of the Court

Private property is a more subtle institution than scholars and judges have often realized. Like Humpty Dumpty,¹⁹ resources prove easier to break up than to put back together. Identifying the boundary principle threads together disparate property doctrines, clarifies strange asymmetries in property theory, and unknots some takings law puzzles.

II. THE BOUNDARY PRINCIPLE IN PROPERTY LAW

This Part canvasses Anglo-American property law to show that the boundary principle is a pervasive component of well-functioning private property regimes. While governments rarely enacted the doctrines that follow with efficiency concerns as their primary (or even secondary) motivations, the doctrines have often persisted, in part, because they have proven conducive to productive uses of resources.²⁰ Many of these boundary rules accidentally and incompletely solved problems of transaction costs, strategic bargaining, and cognitive biases that would otherwise have led owners to waste resources.

Ownership can be analyzed in many dimensions. One useful framework distinguishes among categories of ownership I call “physical things,” “legal things,” and “legal relations.” While distinctions among these three types of fragmentation are primarily useful as organizational tools, the three categories do correspond to historical shifts in property theory and to trends in constitutional decision-making. Within each type of ownership, boundary doctrines can operate directly, by preventing and abolishing fragments; indirectly, by imposing costs on ownership that deter fragmentation; and informally, through non-legal institutions and norms that replace formal boundary rules.²¹

cannot *simultaneously*: (1) hold to a view celebrating the common law as a repository of efficient solutions to complex problems; and (2) believe that private property is simply a bundle of entitlements that owners should be able to chop up as they please.

19. Fairy tales are always a risky source for legal analogy. On the other hand, a recent Lexis search revealed 199 legal articles relying on Humpty Dumpty. In this, his 200th appearance, Humpty Dumpty can convey the fragility of private property and the difficulty of rebundling fragments: It is easier to make an omelet out of an egg than an egg out of an omelet. Perhaps Goldilocks (in her 42nd appearance) could also serve as an organizing fairy tale: To function well, private property must be structured “just right,” without too many competing users or excluders. As an aside, Lexis reveals that law professors venture scientific analogies rather less often. Only a handful of articles, for example, explore the metaphoric possibilities of the Second Law of Thermodynamics. This Law could be read to suggest that fragmenting private property past an equilibrium range may irreversibly dissipate its productive force.

20. See Michelman, *supra* note 8, at 15-16.

21. This Part streamlines the discussion by focusing on the anticommons side of the property continuum. Boundary rules on the commons side are equally complex. See, e.g., RESTATEMENT (SECOND) OF TORTS § 850A (1979) (discussing the “reasonable use” doctrine for riparian owners of a watercourse); 2 AMERICAN LAW OF PROPERTY 750-55 (A. James Casner ed., 1952) [hereinafter ALP] (discussing “unitization” as one of several methods for correlating oil field ownership interests). Moreover, to limit the need for background explanations, this Part illustrates

A. *Physical Boundaries: From Primogeniture to Gene Patents*

1. *Defining Physical Things*

According to the lay intuition, private property is often thought of as a physical thing that can be physically divided.²² Under this view, Blackacre *itself* is the core of private property. Cut in half, it yields Blackacre and Whiteacre, each equally private property. Cut in half again, the resulting lots are still private property. At some point, however, the lots become so checkerboarded²³ that the land can no longer be used productively if each of the fragments is still labeled as private property. No fragment owner can overcome the bargaining hurdles necessary to gain sole ownership of the underlying resource on a usable scale. Because too many people each may have the right to use or to exclude, the resource may be wasted in a tragedy of the commons or anticommons.

2. *Early Mechanisms*

Historically, there have been many reasons to prevent excessive physical fragmentation. Prior to developing indirect taxation mechanisms, undivided land provided the basis for public goods such as a military force.²⁴ Soon after the Norman Conquest, knight service required landholdings large enough to support provisions for a certain number of armed men on horses.²⁵ Nevertheless, tenants had social and economic incentives to fragment land by subinfeudation, particularly to avoid paying

how boundary rules operate by using familiar property doctrines rather than the more intricate environmental or corporate law examples alluded to earlier.

22. See BRUCE A. ACKERMAN, *PRIVATE PROPERTY AND THE CONSTITUTION* 98-100 (1977) (discussing the layperson's view of property as thing-ownership); Thomas C. Grey, *The Disintegration of Property*, in *NOMOS XXII: PROPERTY* 69, 69 (1980) (distinguishing thing-ownership and bundle-of-rights metaphors). Even after Ackerman's book, the "thingness" of property plays an underappreciated role in property theory.

23. See *Leo Sheep Co. v. United States*, 440 U.S. 668, 672-73 (1979) (discussing the use of large-scale "checkerboard" land grants to spur railroad development). Self-interest is the most powerful mechanism that prevents downward checkerboarding; no single legal rule does so. See generally Heller, *supra* note 8, at 682-84 (discussing the Quaker Oats Big Inch Land Giveaway); Michelman, *supra* note 8, at 9, 35 n.14 (noting that property law permits checkerboard ownership even at the square centimeter level, though such ownership tends towards economic inconvenience).

24. In the early common law, feudal ownership of real property consisted of personal as well as economic relationships. See A.W.B. SIMPSON, *LAND OWNERSHIP AND ECONOMIC FREEDOM* (forthcoming 1999) (manuscript at 21, on file with author) ("It was all very like Chicago in the days of Al Capone, when Capone's henchmen were installed in various profitable enterprises in return for an obligation to rub out rivals whenever instructed to do so. In return, Al Capone provided them with various forms of protection . . .").

25. See *id.*; see also A.W.B. SIMPSON, *A HISTORY OF THE LAND LAW* 47-102 (2d ed. 1986) (detailing the origins of the fee simple in England).

feudal incidents.²⁶ In response to increasing fragmentation by tenants, the *Statute Quia Emptores*²⁷ prevented further fragmentation via subinfeudation and, in exchange, gave tenants rights to market undivided holdings.²⁸

Primogeniture, the passing of an estate to the first-born son, also prevented physical fragmentation of land among aristocratic families in early England.²⁹ Though designed with dynastic goals foremost in mind, primogeniture ensured that land would remain physically unfragmented over generations and thereby be available to support the ambitions of family patriarchs.³⁰ These rules did not carry over to America,³¹ where land was considered more plentiful and the common law developed other mechanisms to prevent excessive fragmentation. Despite the demise of primogeniture, modern American "elective share" statutes³²—along with intestacy rules that limit fragmentation among heirs and escheat undivided land to the state³³—can function as pale reflections of old-fashioned physical boundary-enforcing mechanisms. What is striking in modern property law is how much physical fragmentation is permitted, rather than how little.

When societies lack effective rules to prevent spatial fragmentation, landholdings may split as they pass down the generations,³⁴ often inspiring more radical measures to reaggregate land into viable parcels. In

26. See SIMPSON, *supra* note 24 (manuscript at 21).

27. For a further discussion of the *Statute Quia Emptores*, see CRIBBET & JOHNSON, *supra* note 13, at 143-49.

28. See SIMPSON, *supra* note 24 (manuscript at 22) ("In so far as the early feudal world resembled Al Capone's Chicago, alienation, if it involved substituting one henchman for another, would obviously require Capone's consent. . . . But *Quia Emptores Terrarum* permitted and indeed required such substitution, and deprived lords of any power to prevent it.").

29. See *id.*

30. See *id.* By mandating that the eldest son inherited all of his father's land, primogeniture kept an identifiable person available to carry the burden of feudal services and incidents. The younger children received non-estate "portions." Susan Staves, *Resentment or Resignation? Dividing the Spoils Among Daughters and Younger Sons*, in EARLY MODERN CONCEPTIONS, *supra* note 15, at 194, 194-99.

31. See GREGORY S. ALEXANDER, *COMMODITY & PROPRIETY: COMPETING VISIONS OF PROPERTY IN AMERICAN LEGAL THOUGHT, 1776-1970*, at 37-41 (1997).

32. In the many states with modern "elective share" statutes, a surviving spouse may elect to take a statutory share, usually one-half or one-third, of all the decedent's real and personal property. LAWRENCE W. WAGGONER ET AL., *FAMILY PROPERTY LAW* 526-34 (2d ed. 1997) (discussing conventional elective share law and the 1990 Uniform Probate Code's redesigned elective share); JESSE DUKEMINIER & JAMES E. KRIER, *PROPERTY* 400-02 (3d ed. 1993); see JESSE DUKEMINIER & STANLEY M. JOHANSON, *WILLS, TRUSTS, AND ESTATES* 388-402 (4th ed. 1990). Rules governing dower and curtesy also can have similar consolidating effects. See *id.* at 375-77.

33. See DUKEMINIER & KRIER, *supra* note 32, at 200-01.

34. In places such as 19th-century Ireland, families starved, each on their dispersed plots, in part because land often became too fragmented to support sustainable agriculture. See Cynthia E. Smith, Comment, *The Land-Tenure System in Ireland: A Fatal Regime*, 76 MARQ. L. REV. 469, 481-83 (1993). Working in rural Bangladesh during the late 1980s, I noticed the identical problem, with people still living under feudal arrangements and starving because plots and rights had become so intricately fragmented that many families could not assemble viable farms.

Blackstone's time, the main spatial consolidation mechanisms were the hundreds of "Local and Personal Acts of Parliament" by which landowners enclosed agricultural lands, entrepreneurs consolidated land for industrial schemes, and local governments engaged in wide-scale public works.³⁵ While the agricultural enclosure movement in England was complex, and its history is contested,³⁶ enclosure, at a minimum, defragmented farmland by abolishing interests in physical strips and set the stage for farming on a more economically viable scale—though terrible social costs were imposed in the process.³⁷

When public policy encourages the formation of lots that are too small to use productively, owners may have a difficult time aggregating them to a more viable scale.³⁸ For example, in nineteenth-century frontier America, homesteaders in parts of the country received plots too small to be economically viable, given local climate conditions and existing agricultural technology.³⁹ Because homestead laws prevented sale prior to acquiring full ownership, people either stayed and starved or abandoned the land. A checkerboard of uneconomic and abandoned farms resulted, with no legal mechanisms to consolidate ownership to a viable scale.⁴⁰ With homesteading, a tragedy of the anticommons emerged because the government prohibited consolidation—a legislative mistake unlike the previous examples where owners, pursuing their own individual agendas, excessively fragmented their own resources.

35. See SIMPSON, *supra* note 24 (manuscript at 30-32). As Simpson notes, the widespread use of these Acts "reflect[s] the belief that rapid economic development is not compatible with too strong respect for the individual autonomy of the landowner. . . . In a sense the legal system enhanced the positive economic freedom of entrepreneurs at the cost of diminishing the negative freedom of individual property owners." *Id.* at 32.

36. See Frank A. Sharman, *An Introduction to the Enclosure Acts*, 10 J. LEGAL HIST. 45, 47-50 (1989).

37. See SIMPSON, *supra* note 24 (manuscript at 18-19); see also *id.* at 303 n.24, 304 n.58 (collecting and evaluating the sources); Robert C. Ellickson, *Property in Land*, 102 YALE L.J. 1315, 1392 nn.386-90 (1993) (compiling and assessing sources); cf. J.M. NEESON, *COMMONERS: COMMON RIGHT, ENCLOSURE AND SOCIAL CHANGE IN ENGLAND, 1700-1820* (1993) (arguing that the inefficiency of the old system has been exaggerated).

38. According to Ellickson, "the events of [the] enclosure movement illustrate how land rights may become 'excessively decomposed.' When a group is stymied by large-number coordination problems, it is possible that a state or other higher authority may usefully intervene to facilitate modernization." Ellickson, *supra* note 37, at 1392 (citation omitted).

39. See Steven C. Bahls, *Preservation of Family Farms—The Way Ahead*, 45 DRAKE L. REV. 311, 327 (1997) ("Farms and ranches are now measured in thousand acre increments in eastern Montana, unlike the old 320 acre measurement of a homestead. . . . As one passes the many abandoned small homesteads and ghost towns, one cannot help but wonder what it would have cost society to preserve these thousands of homesteads as viable economic units."). In Montana, full ownership required working the land for a practically unattainable number of years. See *An Act To Secure Homesteads to Actual Settlers on the Public Domain*, 12 Stat. 392 (1862) (codified as amended at 43 U.S.C. § 161) (repealed 1976).

40. See Bahls, *supra* note 39, at 327.

3. *Modern Land Use Controls*

In modern American law, the boundary principle limits spatial fragmentation of real property through a variety of direct and indirect mechanisms. For example, zoning and subdivision rules often have minimum lot sizes, floor areas, and setbacks that prevent people from spatially fragmenting resources too much.⁴¹ Absent regulation, owners may fragment land without considering the externalities they impose on neighbors, or the intergenerational costs of later bundling to achieve economies of scale. Occasionally, developers subdivide land too far ahead of development, go bankrupt, and leave behind fragmented ownership that cannot be reassembled easily.⁴² From a welfare standpoint, the lot-sizing problem can be cast as one of encouraging all cost-justified fragmentation and no more.

While cities may abuse their zoning powers to keep out newcomers, the poor, and racial minorities,⁴³ the dynamics of the one-way ratchet of fragmentation suggest another logic for minimum lot sizes: to counteract market forces that might lead individuals to break up land too much. Because it may be easier for zoning regulators to allow more fragmentation later than for individuals to turn the ratchet back and reassemble land,⁴⁴ regulators keep lots relatively large as a buffer against a costly tragedy of the anticommons.

Property taxes and registration fees prove to be powerful, indirect mechanisms that deter excessive fragmentation, even if bounding private property is not their primary purpose.⁴⁵ For example, the 1976 Federal Land Policy and Management Act (FLPMA)⁴⁶ provides that holders of unpatented mining claims who fail to comply with annual filing requirements forfeit their property.⁴⁷ In upholding the constitutionality of this private law approach to consolidating fragmented ownership, the Court

41. These regulations may be primarily revenue-driven efforts to ensure that newcomers are overall contributors to, rather than net consumers of, local government services. See Richard Briffault, *Our Localism: Part I—The Structure of Local Government Law*, 90 COLUM. L. REV. 1, 49-50 (1990) (discussing local governments' incentives to engage in fiscal zoning).

42. See, e.g., *Rick v. West*, 228 N.Y.S.2d 195 (Sup. Ct. 1962).

43. See, e.g., *Southern Burlington County NAACP v. Township of Mount Laurel*, 336 A.2d 713 (N.J. 1975); Robert C. Ellickson, *Suburban Growth Controls: An Economic and Legal Analysis*, 86 YALE L.J. 385 (1977).

44. For an account of the difficulties of land assembly in New York, see ANDREW ALPERN & SEYMOUR DURST, *HOLDOUTS!* (1984).

45. See *Heller*, *supra* note 8, at 683 (“[T]he requirements that owners incur the costs of registering title and paying property taxes, and the subsequent escheat of the land for failure to do so, function[] as powerful mechanisms to return the low-value [fragments] to a bundle of usable private property.”).

46. 43 U.S.C. §§ 1701-1784 (1994).

47. See *United States v. Locke*, 471 U.S. 84 (1985) (upholding the constitutionality of FLPMA against a takings claim).

described the results of bad mining law and Congress's response to the problem:

By the 1960s, it had become clear that this 19th-century laissez-faire regime had created virtual chaos with respect to the public lands. In 1975, it was estimated that more than 6 million unpatented mining claims existed on public lands other than the national forests; in addition, more than half the land in the National Forest System was thought to be covered by such claims. . . . [N]o simple way existed for determining which public lands were subject to mining locations. . . . [In response,] the Act establishes a federal recording system that is designed . . . to rid federal lands of stale mining claims.⁴⁸

By imposing an annual disclosure expense, Congress intended that FLPMA would lead owners to abandon low-value fragments. More generally, rules ensuring that owners bear a minimum cost for both creating and maintaining fragments can deter at least some excessive fragmentation and can encourage owners to abandon low-value lots to the state, which can rebundle and recycle them.⁴⁹

4. *The Intellectual Property Analogy*

Tangible property, both real and personal, still forms the core of the lay conception of private property⁵⁰ and the source of the most thickly developed boundary rules. But the locus of economic value is shifting to intellectual, ecological, corporate, and other intangible property.⁵¹ Because people cannot physically hold intangible property, they may have relatively unformed intuitions about viable boundaries.⁵² Like real property, there is a viable spatial and temporal scale within which intangible property functions efficiently as private property.

To give an intellectual property example, patent law only weakly prevents excessive fragmentation in biomedical research.⁵³ Old-fashioned boundary doctrines, such as the "utility" requirement in patent law, have not kept pace with technological change.⁵⁴ Rebecca Eisenberg and I have

48. *Id.* at 86-87.

49. *See Heller, supra* note 8, at 682-84 (arguing that registration fees consolidated ownership in the area of the Big Inch Land Giveaway).

50. *See ACKERMAN, supra* note 22, at 97-100.

51. *See generally id.* at 166 (discussing intangible property as a locus of economic value).

52. *See id.*

53. *See Heller & Eisenberg, supra* note 5, at 700 (discussing the possibility of increasing the threshold of the utility requirement as a way to prevent the anticommons problem resulting from the patenting of anonymous gene fragments).

54. *See id.* at 699-700.

argued that creating property rights in isolated gene fragments seems unlikely to track socially useful bundles of property rights—a form of excessive “physical” fragmentation.⁵⁵ Granting overlapping patents on individual gene fragments may deter innovation or require firms to overcome strategic behaviors, cognitive biases, and costly bundling transactions before developing commercial products.⁵⁶ Thus, the proliferation of intellectual property rights in upstream research may be stifling life-saving innovations further downstream in the course of research and product development.⁵⁷

Although patent law has few formal mechanisms to deter excessive fragmentation, informal institutions may be able to re-scale fragmented resources to put them into productive use. Communities of intellectual property owners who interact on a recurring basis sometimes develop institutions to reduce transaction costs for bundling multiple licenses.⁵⁸ For example, in the music industry, copyright collectives have evolved so broadcasters and other producers can readily obtain rights to use numerous works copyrighted by different owners.⁵⁹ In the automobile, aircraft, and synthetic rubber industries, patent pools have emerged, sometimes with the help of government, when licenses under multiple patent rights were thought necessary to develop important new products.⁶⁰ Such informal and semi-formal institutions may expand the range over which private property functions effectively and reduce the precision necessary in the formal law.⁶¹

Intellectual property law in biomedical research is at the fragmentation frontier where formal boundary rules and informal institutions have yet to coalesce. People may break up and claim property, while legislators and judges play catch up and try to reassemble the pieces. As the importance of intellectual property grows, it will become apparent that overly fragmented intellectual property can prove just as costly as the more familiar real property examples.

55. Future commercial products will more likely require the use of larger pieces of DNA, such as those that encode full-length genes. *See id.* at 699.

56. *See id.*

57. *See id.* at 701.

58. *See* Robert P. Merges, *Contracting into Liability Rules: Intellectual Property Rights and Collective Rights Organizations*, 84 CAL. L. REV. 1293 (1996); *cf.* Heller & Eisenberg, *supra* note 5, at 700 (questioning the conditions under which such institutions may emerge in the biomedical research area).

59. *See* Merges, *supra* note 58, at 1328–40.

60. *See id.* at 1340–47.

61. Compared with patent law, copyright law's tragedy of the anticommons is less costly. The “fair use” doctrine means that copyright holders do not have the right to exclude nonowners from low-intensity uses of protected works. For more intensive uses, the gains from use provide economic rents that support the transaction costs of acquiring licenses. Though fair use reduces underuse, some underuse remains because of transaction costs and because copyright holders, who are not perfectly discriminating monopolists, charge a positive price for a zero marginal cost use.

B. *Legal Boundaries: From Numerus Clausus to Reverter Acts*

1. *Defining Legal Things*

Many current fragmentation problems arise from subdividing what may be called legal things. With legal things, it is the fee simple in Blackacre, not Blackacre itself, that is the core of private property. Halved, the legal thing may yield a present and a future interest, or a freehold and a non-freehold estate. Divided still further, legal things may be broken down into fee tails, easements, and the other allowable forms of the *numerus clausus*—a useful term in continental civil-law systems that describes the basic forms of ownership that a given legal system allows.⁶² As with physical fragmentation, at some point, preserving fragments of legal things as private property diminishes the productivity of resources even though each fragment may still have some positive economic value.

2. *Estates*

The boundary principle limits fragmentation of legal things.⁶³ At a basic level, property law sharply restricts the allowable forms of property ownership—including, for example, the fee simple, fee tail, and servitude.⁶⁴ One can break a fee simple into smaller fee simples, even into defeasible fee simples, but not into a fee complicated. Why not? Bernard Rudden notes: “The current literature offers no economic explanation of the *numerus clausus*, but seems largely to ignore its existence.”⁶⁵ One could argue that there is no reason for the limits of the *numerus clausus*. If an owner creates a nonstandard legal thing and others reject it, then the owner bears the cost through a lower property value, while bundling entrepreneurs gain an opportunity to profit. After considering a range of arguments to

62. Bernard Rudden, *Economic Theory v. Property Law: The Numerus Clausus Problem*, in OXFORD ESSAYS ON JURISPRUDENCE 239, 242 (John Eekelaar & John Bell eds., 3d ed. 1987). In Blackstone's time, the *numerus clausus* was much more numerous, populated with incorporeal hereditaments such as corodies and advowdsons that no longer exist. See SIMPSON, *supra* note 25, at 106-07, 121-22 (discussing these and other ancient forms of property). Over time, these forms were pared down to the streamlined list that exists today. Now, the list may be growing again with innovations such as condominiums and time shares.

63. See Michelman, *supra* note 8, at 15 (noting that private property “abounds in restrictions on decomposition of titles . . . : restrictive doctrines regarding easements in gross, perpetuities, covenants running with the land, restraints on alienation, duration of cotenancies, ‘novel’ easements and estates, to name just some of the pertinent technicalities of the land law” (footnotes omitted)).

64. Rudden notes: “In all ‘non-feudal’ systems with which I am familiar (whether earlier, as at Rome, or later), the pattern is (in very general terms) similar: there are less than a dozen sorts of property entitlements.” Rudden, *supra* note 62, at 241. Through contracts, an entrepreneur can combine the basic forms of the *numerus clausus* into more complex legal objects such as modern financial derivatives or real estate investment trusts.

65. *Id.* at 261.

explain the existence of the *numerus clausus*,⁶⁶ Rudden's most persuasive argument foreshadows my anticommons analysis:

If, as in a development area, the property entitlement and correlative burdens are widely dispersed, there will be holdout and free-rider difficulties. Perhaps, then, there is sense in limiting the occasions for any of these expensive situations by restricting, ere their birth, the class of [legal things]. If this be a good reason, it is strange that so little of the standard doctrine and case law spells it out.⁶⁷

Even within the narrow confines of the *numerus clausus*, the centuries-long struggle between landowners and the state over particular estates, such as the fee tail and life estate, further limited the temporal fragmentation of legal things.⁶⁸ By putting property in tail, owners attempted to control resources beyond their lifetimes, thereby placing the costs of the resulting decrease in productivity on future generations' and on society.⁶⁹ In a complex story, judges minimized the social costs of this intertemporal fragmentation by limiting the tail (though they may have increased spatial fragmentation).⁷⁰ The evisceration of the fee tail and life estate represents an example of the social benefits from consistent application of the boundary principle prevailing (to an extent) over owners' desires for unrestricted temporal fragmentation.⁷¹

66. See *id.* at 245-60. For example, each new estate with its attendant incidents and duties imposes social costs for those who are trying to figure out what they own. Standardized estates give land more value because they reduce the costs of transacting over land. See *id.* at 253-54.

67. *Id.* at 259.

68. See SIMPSON, *supra* note 24 (manuscript at 36) ("The ideal function of the entail was to preserve a family landowning territory as a single block, and pass it down the male line of a family ad infinitum."); SIMPSON, *supra* note 25, at 81-102 (detailing the technicalities). The *Statute de Donis Conditionabilis* of 1285 permitted what became known as the fee tail. 13 Edw., ch. 1 (Eng.). Within 200 years, common-law courts created mechanisms to defeat the entail. See CRIBBET & JOHNSON, *supra* note 13, at 49 (discussing techniques for defeating the entail).

69. Tenants holding in tail could block the execution of long leases, mortgages, and other productivity-enhancing uses of land. In the early 19th-century American context, James Kent acknowledged that "the desire to preserve and perpetuate family influence and property is very prevalent in mankind, and is deeply seated in the human affections," but then proceeded to criticize the fee tail's unintended consequences for productivity. 4 KENT, COMMENTARIES ON AMERICAN LAW 19, cited in ALEXANDER, *supra* note 31, at 146.

70. See SIMPSON, *supra* note 24 (manuscript at 36). The common law developed mechanisms such as the fictitious lawsuit of the common recovery to bar the entail and, finally, in the 19th century, gave the tenant in tail the power to convey a fee simple to another by deed. See *id.* Today the fee tail has been, for the most part, abolished or severely limited in its effect. The few U.S. states that still recognize the fee tail construe it to limit the period during which the estate is fragmented. See DUKEMINIER & KRIER, *supra* note 32, at 213-14.

71. See A.W.B. SIMPSON, LEGAL THEORY AND LEGAL HISTORY: ESSAYS ON THE COMMON LAW 144-62 (1987) (contrasting the English and Scottish entails).

While new estates are rarely admitted to the *numerus clausus*,⁷² the emergence of the common-law trust shows that new forms can be created.⁷³ The law of trust embodies a complex solution to the familiar problem of inter-temporal fragmentation or "dead hand control."⁷⁴ It controls excessive fragmentation by channeling individual freedom to dispose of assets. In Gregory Alexander's terms, the debate on trust law has obscured the conflict between the donor's "freedom of disposition" and the law's tendency to keep resources in "consolidated form."⁷⁵

The trust can help wealthy owners keep resources intact across generations without the productivity-destroying effects of fee tails or life estates.⁷⁶ More importantly, the trust offers an increasingly useful alternative to the corporate form, particularly for pensions, mutual funds, and asset securitization.⁷⁷ Using equitable ownership and trust control keeps the underlying corpus unfragmented and well-scaled for productive use. At the same time, the income stream generated by the trust can be finely fragmented among generations and individuals. Rather than requiring complex negotiations among owners of real property, the trust form offers a standard governance structure with a trustee as the sole decisionmaker.

72. New forms of negative easements, such as conservation easements, may qualify as a recent American addition to the *numerus clausus*. See Andrew Dana & Michael Ramsey, *Conservation Easements and the Common Law*, 8 STAN. ENVTL. L.J. 2 (1989). When such servitudes are cast in covenant form, under the common law the burden will not run if the benefit is in gross, which is the usual case. In response, states have authorized conservation easements by statute. See DUKEMINIER & KRIER, *supra* note 32, at 901-02.

73. A recent continuation of an old debate considers the extent to which the trust is properly part of contract or property law. Compare Henry Hansmann & Ugo Mattei, *The Functions of Trust Law: A Comparative Legal and Economic Analysis*, 73 N.Y.U. L. REV. 434, 469-72 (1998) (arguing that the trust is a distinct property institution because of its effects on third-party creditors), with John H. Langbein, *The Contractarian Basis of the Law of Trusts*, 105 YALE L.J. 625, 646-47 (1995) (arguing that the trust is functionally indistinguishable from modern third-party beneficiary contracts).

74. While the common law has accepted the trust form, civil-law regimes still find the trust controversial and have yet to admit it to the *numerus clausus*. See Hansmann & Mattei, *supra* note 73, at 442.

75. See Gregory S. Alexander, *The Dead Hand and the Law of Trusts in the Nineteenth Century*, 37 STAN. L. REV. 1189, 1189 n.1 (1985) (identifying the "consolidation form" shaping trust law).

76. In 1925, England abolished legal future interests in favor of the trust. See C. Dent Bostick, *Loosening the Grip of the Dead Hand: Shall We Abolish Legal Future Interests in Land?*, 32 VAND. L. REV. 1061, 1090-97 (1979). While the continued existence of legal future interests in the United States poses knotty problems for law students, such interests no longer impose significant costs upon lawyers because of flexible alternatives in modern trust law.

77. See Hansmann & Mattei, *supra* note 73, at 466-69.

3. *Future Interests*

Early property law developed boundary rules to limit inter-temporal fragmentation⁷⁸ that have been mostly subsumed into the tortuous Rule Against Perpetuities (RAP).⁷⁹ Scholars use several familiar vocabularies to discuss how the RAP addresses excessive fragmentation. Some scholars refer to conflicts over alienability between current and future generations;⁸⁰ others argue that the RAP does not increase alienability in general, but only makes one particular estate, the fee simple, more alienable.⁸¹ Following this approach, some scholars frame the debate as one between an individual's freedom to alienate and society's interest in preserving the marketability of the underlying resource.⁸² Recognizing that purely private decisions about

78. Three archaic rules—the Rule in Shelley's Case, the Doctrine of Worthier Title, and the Destructibility of Contingent Remainders—prevented an owner from adopting certain feudal tax-avoiding techniques of fragmenting land between a current user and an unascertained future owner. See *DUKEMINIER & KRIER*, *supra* note 32, at 242-47.

79. This rule limits the period of time during which an owner can fragment property and limits the grantor's ability to impede future productive use. See 6 ALP, *supra* note 21, § 26.2. The period is generally defined as lives in being at the time of the creation of the interest plus 21 years. See *JOHN CHIPMAN GRAY, THE RULE AGAINST PERPETUITIES* § 201 (4th ed. 1942).

80. For example, in this vein, Lewis Simes, in his Thomas Cooley lectures at the University of Michigan, noted that the Rule "strikes a fair balance between the desires of members of the present generation, and similar desires of succeeding generations, to do what they wish with the property which they enjoy." LEWIS M. SIMES, *PUBLIC POLICY AND THE DEAD HAND* 58 (1955). Simpson is critical of these types of justifications:

Modern textbooks as well as historical works tend to portray the law of real property as a body of law which has zealously protected the power of free alienation of land, and the Rule Against Perpetuities (and associated doctrines) as an effective curb against attempts to destroy this power in landowners.

SIMPSON, *supra* note 25, at 241; see also SIMPSON, *supra* note 71, at 159-60. In contrast to Simes, Simpson argues that

the function of the rule was to regulate a system of gift giving whose primary function was ensuring that a family retained a permanent endowment. . . . The intermittent freedom to dispose of the fee simple which the system conferred was indeed not usually employed to place family lands on the market, but merely to resettle them as seemed appropriate and tie them up for another generation.

SIMPSON, *supra* note 24 (manuscript at 37).

81. As Sterk notes, "individual present and future estates in land could be made freely alienable. In fact, the rule itself restricts alienability only by prohibiting certain methods of alienation." Stewart E. Sterk, *Freedom from Freedom of Contract: The Enduring Value of Servitude Restrictions*, 70 *IOWA L. REV.* 615, 639 (1985).

82. See, e.g., *GOLDSTEIN*, *supra* note 16, at 474. Jeffery Stake agrees and elaborates:

[T]he Rule's tendency to aggregate rights should lead to improved allocation of assets for two reasons. First, the costs of disaggregation and aggregation are asymmetrical. It is comparatively easy to divide the bundle of rights if divided rights would generate more wealth than would a single fee simple. Conversely, due to the problems of locating multiple holders and the possibilities of strategic bargaining such as holding out, it is much more costly to reaggregate rights if a fee simple would generate more wealth. Since private transactions are thus more difficult in one direction than private transactions going the other way, the Rule can be expected to reduce transaction costs by leaving the parties in the position that is more easily changed. . . .

the use of property can impose long-term social costs,⁸³ the RAP conclusively presumes a point after which the social cost of fragmentation exceeds private gains.

The RAP is an example of the "strong-form path dependence"⁸⁴ of particular boundary rules. Its contours result from long-lost political battles;⁸⁵ and its present form baffles and confuses. Yet the Rule, in some form or another, proves resilient because all versions retain its most useful incidental feature, which is to limit inter-temporal fragmentation.⁸⁶ Whether measured by lives in being at the time of the creation of the interest, by the "two lives rule,"⁸⁷ or by a fixed term such as ninety years,⁸⁸ almost every state retains some version of the RAP.⁸⁹ If the Rule were abolished, states would have to address in some other way the likelihood that testators planning for death would make choices that diverge too far from the social-welfare maximizing use of a resource, sometimes resulting in the destruction of resource productivity.⁹⁰

Second, there is empirical evidence that the packages of rights resulting from the operation of the Rule are more desirable to the market than the packages intended by the transferor.

Jeffrey E. Stake, *Darwin, Donations, and the Illusion of Dead Hand Control*, 64 TUL. L. REV. 705, 723 (1990).

83. See 6 ALP, *supra* note 21, § 26.2 (noting the "balancing of social interests" involved in the RAP).

84. Mark J. Roe, *Chaos and Evolution in Law and Economics*, 109 HARV. L. REV. 641, 651-52 (1996).

85. Lost perhaps to most readers, but not to Brian Simpson or to George Haskins. See SIMPSON, *supra* note 71, at 159; George Haskins, *Extending the Grasp of the Dead Hand: Reflections on the Origins of the Rule Against Perpetuities*, 126 U. PA. L. REV. 19 (1977) (arguing that the Rule emerged as a compromise that allowed old dynasties to keep land tied up for long periods of time while responding to the desires of the new rich to have land released from old family settlements).

86. Modern RAPs translate the common law limits into various forms (wait-and-see or 90 years) but keep intact the basic point that an owner cannot fragment rights too much for too long. See RESTATEMENT (SECOND) OF PROPERTY: DONATIVE TRANSFERS § 1.4 (1983).

87. ALEXANDER, *supra* note 31, at 118-21.

88. See Lawrence W. Waggoner, *The Uniform Statutory Rule Against Perpetuities: The Rationale of the 90-Year Waiting Period*, 73 CORNELL L. REV. 157 (1988).

89. See DUKEMINIER & KRIER, *supra* note 32 at 316 (noting the four states that have abolished the Rule, though these states nevertheless require that the property be held in trust and that trustees have the power to sell the trust assets); WAGGONER ET AL., *supra* note 32, at 1162.

90. Abolishing the RAP can have unexpected consequences. For example, the federal generation-skipping tax (GST) contains a \$1 million exemption (\$2 million per couple) that relies solely on state RAPs to police temporal fragmentation. In states that have abolished the RAP, people can now create true dynasty trusts—trusts that can, in principle, last forever—with ever-increasing numbers of potential beneficiaries. States are beginning to compete to attract the dynasty trust business. "This fledgling movement poses a disturbing threat to controlling the dead hand. Until Congress or the Treasury Department closes this loophole in the GST tax, the wealthy will continue to have an unbridled option of creating dynasty trusts." WAGGONER ET AL., *supra* note 32, at 1162.

As a boundary rule, all forms of the RAP prove quite deficient. Not only does the RAP allow people to fragment property for a very long time,⁹¹ but more crucially, it exempts coverage of future interests created in the grantor, such as “possibilities of reverter” and “rights of entry.”⁹² These exempted interests can destroy resource productivity, not because owners are inchoate, but because identifying reversioners poses high practical costs. To the extent future interests created in grantors are alienable, as they often are,⁹³ the RAP becomes a purely formal constraint that can be evaded by competent drafting.⁹⁴

Some of the most startling boundary rules to emerge recently are those that prevent a tragedy of the anticommons by filling gaps that the RAP’s odd limits create. For example, “reverter acts” abolish vested, valuable legal things including possibilities of reverter and rights of entry.⁹⁵ Some states limit these venerable interests to a certain number of years, beyond which the possessory fee becomes absolute and the vested future interest becomes invalid,⁹⁶ while other states even eliminate these property interests retroactively.⁹⁷ Courts have generally upheld reverter acts against takings challenges on the grounds that excessive fragmentation clogs title and reduces marketability of property.⁹⁸ Similarly, “marketable title acts” eliminate certain property interests that are not re-recorded after a statutory period.⁹⁹ There is a stark contrast between reverter acts and marketable title acts that destroy existing ownership fragments to avoid a tragedy of the anticommons, and recent Court decisions discussed in Part IV that preserve fragments and ensure tragedy.

91. See SIMPSON, *supra* note 71, at 159 (noting that “the contemporary oddity of the rule lies not in what it prevents, but in how much it allows”).

92. Alternatively, as Sterk notes, possibilities of reverter and rights of entry could be characterized as interests that satisfy the RAP because they are vested at the time of creation. See Sterk, *supra* note 81, at 642. In either case, the RAP does not sweep away these interests, which could potentially remain viable for centuries as inchoate ownership fragments. By contrast, English statutory law makes these interests subject to the RAP. See DUKEMINIER & KRIER, *supra* note 32, at 299.

93. See *id.* at 238 (discussing the modern trend).

94. Alternatively, RAP violations can be avoided through the use of perpetuities-savings clauses. See WAGGONER ET AL., *supra* note 32, at 1128-34. Perpetuities-savings clauses do not, however, avoid the RAP’s limits on temporal fragmentation.

95. See, e.g., MASS. ANN. LAWS ch. 184A, § 7 (Law. Co-op. 1987).

96. See LEWIS M. SIMES & ALLAN F. SMITH, THE LAW OF FUTURE INTERESTS § 1994, at 273-74 (2d ed. 1956); see also Sterk, *supra* note 81, at 642-43 nn.112-14 (collecting state statutes).

97. See SIMES & SMITH, *supra* note 96, § 1994, at 275.

98. See DUKEMINIER & KRIER, *supra* note 32, at 299 (citing cases).

99. See, e.g., UNIF. MARKETABLE TITLE ACT, 13 U.L.A. 112 (1990 & Supp. 1995) (establishing a statutory period of 30 years). See generally Walter E. Barnett, *Marketable Title Acts—Panacea or Pandemonium?*, 53 CORNELL L. REV. 45, 47, 52-60 (1967) (discussing these acts). In *Texaco v. Short*, 454 U.S. 516 (1982), the Supreme Court upheld a retroactive Indiana marketable title act that abolished unused mineral claims not re-recorded every 20 years. See *id.* at 518.

When formal boundary mechanisms fail to ensure a viable scale of resource use, then private and informal institutions may emerge to manage fragmented legal things more efficiently.¹⁰⁰ For example, one might expect that property law would require recording of easements, covenants, liens, and other potentially hidden ownership fragments that threaten to decrease productivity.¹⁰¹ Instead, the private, contract-based institution of title insurance emerged, ensuring that a buyer can acquire at least the money equivalent of an unfragmented parcel even if undisclosed ownership interests exist.¹⁰² Title insurance represents the price society pays for allowing undiscoverable private fragmentation.¹⁰³

C. *Relational Boundaries: From Condos to the California Coast*

1. *Defining Legal Relations*

Finally, the core of private property can also be conceived as a bundle of legal relations in Blackacre. Dividing this bundle in half may break up the "right to lease" from the "right to sell," but each smaller subset of legal relations still may be recognizable as private property.¹⁰⁴ Unmoored from the reference to a crystallized physical or legal thing, a bundle of legal

100. See ROBERT C. ELLICKSON, *ORDER WITHOUT LAW: HOW NEIGHBORS SETTLE DISPUTES* 15-103 (1991) (discussing several informal means employed by California ranchers to resolve disputes arising from wayward cattle); ELINOR OSTROM, *GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION* 182-85 (1990) (discussing sustainable informal management of commons resources); Carol Rose, *The Comedy of the Commons: Custom, Commerce, and Inherently Public Property*, 53 U. CHI. L. REV. 711, 739-49 (1986); Gary D. Libecap, *Government Policies on Property Rights to Land: U.S. Implications for Agricultural Development in Mexico*, 60 AGRIC. HIST., Winter 1986, at 32, 41-45 (describing efforts by the Navajo to prevent overgrazing on open ranges).

101. See Myres S. McDougal & John W. Brabner-Smith, *Land Title Transfer: A Regression*, 48 YALE L.J. 1125, 1126-29 (1939) (describing the "wild disorder" of the system of land title transfer as it existed in 1939 and quoting Professor John R. Rood's observation that "[t]he fact is that the path of the searcher for a safe title to land . . . is beset by more traps, sirens, harpies, and temptations, than ever plagued the wandering Ulysses, the faithful Pilgrim, or the investor in gilt-edged securities"). McDougal and Brabner-Smith fulminate:

As he ploughs through the Joneses, Smiths, and Johnsons and through the deeds, mortgages, judgments, taxes, and mechanics' liens he can never be sure that he isn't missing something fatal to his title. Worse yet, all this laborious retracing of the tortuous path of title is perpetual motion. Every time the land is sold or mortgaged or subdivided—no matter into how small parts—it all has to be done over again

Id. at 1127.

102. See DUKEMINIER & KRIER, *supra* note 32, at 722-23.

103. The underlying fragmentation may be efficient if the holder of the interests values them more than the burdened party is harmed by the costs of discovery and compliance. Title registration systems provide an alternative approach to handling fragmented ownership. The so-called Torrens system that originated in Australia and is used in small parts of the United States prevents hidden ownership interests. See John L. McCormack, *Torrens and Recording: Land Title Assurance in the Computer Age*, 18 WM. MITCHELL L. REV. 61, 70-73, 80-115 (1992) (describing and evaluating the Torrens system).

104. See Heller, *supra* note 8, at 663-64 n.192.

relations poses the greatest difficulties for determining the boundaries of private property. If property is a bundle of rights, then a bare legal relation is something less. But what is it?

Legal relations, as this Article defines them, are distinct from legal things. A legal thing, such as a fee simple, is a highly particularized complex of legal relations that may include the discrete "right to sell," "the right to devise," and similar rights. Along these same lines, an easement is a complex legal thing that contains many more legal relations than simply the stand-alone "right to use." Each of the three metaphoric conceptions of property overlap, certainly, but they reflect distinct traditions in property theory, and are associated with distinct boundary rules and Court doctrine.

The legal relation conception is useful because society is generating more forms of property than the simple thing-ownership metaphor captures. In the context of a limited-access commons or a limited-exclusion anticommons, people often create complex "property governance" structures to coordinate their legal relations with respect to each other and to the external world. These intermediate forms of ownership vary widely, with condominium associations and residential subdivisions closer to the limited-exclusion end of the property continuum and certain public regulatory regimes closer to the full-exclusion end of the continuum. In both cases, internal governance mechanisms may not be developed enough to overcome strategic bargaining problems and avoid a tragedy of the anticommons.

2. *Common-Interest Communities*

Common-interest communities (CICs), including residential subdivisions, condominiums, and cooperatives are perhaps the most significant form of social reorganization of late twentieth-century America.¹⁰⁵ CICs allow developers to unlock social value by dividing land horizontally and vertically and by fragmenting governance among a group of owners.¹⁰⁶ More recently, by breaking up ownership of each unit week-

105. See EVAN MCKENZIE, *PRIVATOPIA: HOMEOWNERS ASSOCIATIONS AND THE RISE OF RESIDENTIAL PRIVATE GOVERNMENT* (1994) (projecting that 25% to 30% of Americans will live in homeowner associations by the year 2000). By allowing a new type of affordable home ownership, the popularization of common-interest community forms are among the great innovations in modern property law. Developers choose these forms in part because their internal governance structures solve coordination problems that were not solvable under the prior law of servitudes and in part because the rules circumvent constraints in the public regulatory regime. See generally Henry Hansmann, *Condominium and Cooperative Housing: Transactional Efficiency, Tax Subsidies, and Tenure Choice*, 20 J. LEGAL STUD. 25 (1991) (discussing tax subsidies and organizational innovation as causes for the rise of condominium ownership).

106. See generally Stewart E. Sterk, *Minority Protection in Residential Private Governments*, 77 B.U. L. REV. 273, 285-86 & n.44 (1997). For example, owners may decide to prevent each other from leasing units at all. A single owner may be able to benefit by dividing ownership

by-week, time-share condominiums have taken fragmentation to a new extreme that increases property values, even while compounding the potential anticommons tragedy.¹⁰⁷ Limited equity cooperatives, in which equity ownership of a unit is shared between a private owner and a local government, are another new form that could both improve social value and lead to a potential anticommons tragedy.¹⁰⁸

CICs illustrate the difficulty of distinguishing good from bad fragmentation.¹⁰⁹ Developers began using the CIC form before fully effective boundary rules on the anticommons side were devised.¹¹⁰ Default boundary rules, imported from the law of servitudes, include judicial resistance to the enforcement of affirmative covenants, the touch-and-concern doctrine, restrictions on benefits held in gross, the change-of-circumstances doctrine, and durational limits contained in marketable title acts.¹¹¹ Like the trust form discussed above, CICs now represent elaborate systems to promote good fragmentation while limiting its social costs. But, like the medieval fee tail, the modern CIC forms may give people too much power to lock resources into low-value uses. The old-fashioned change-of-circumstances doctrine, which removes covenants that have outlived their usefulness, may be too weak to police governance failures in a modern

among short-term renters, but will externalize costs on the community in the form of a decreased commitment to self-governance and increased costs of policing transience. As Sterk notes: "The two most common objections to transient occupants are: (1) financing for individual units is often difficult to obtain unless the development is substantially owner-occupied; and (2) renters, compared with owner-occupants, may have less incentive to observe association rules and to maintain the premises." *Id.* at 285 n.44. The minimal efficient scale of ownership in a condominium may require owner-occupiers rather than renters, given prevailing norms and governance structures.

107. See generally Ellen R. Peirce & Richard A. Mann, *Time-Share Interests in Real Estate: A Critical Evaluation of the Regulatory Environment*, 59 NOTRE DAME L. REV. 9, 11-28 (1983) (outlining various forms of time-share interests). In a typical example, a family might buy the right to use a particular unit for a particular week each year. Creating the time-share form involved disabling certain familiar boundary mechanisms, such as the unwaivable right to partition cotenancies. To mitigate the potential for a tragedy of the anticommons, time-shares typically contain a sunset clause that cashes out the interests after a fixed period—enforcing a global partition by sale—and recreates the underlying resource as a single object of private property. See *id.* at 17-20.

108. See Duncan Kennedy & Leopold Specht, *Limited Equity Housing Cooperatives as a Mode of Privatization*, in A FOURTH WAY? PRIVATIZATION, PROPERTY, AND THE EMERGENCE OF NEW MARKET ECONOMIES 267, 268 (Gregory S. Alexander & Grażyna Skąpska eds., 1994); see also Heller, *supra* note 8, at 649-50 (discussing limited equity cooperatives).

109. "Good" and "bad" law are technical terms that appear from time to time in modern property theory. See, e.g., HERNANDO DE SOTO, *THE OTHER PATH: THE INVISIBLE REVOLUTION IN THE THIRD WORLD* 132 (1989) (defining good and bad law in economic terms).

110. See Robert C. Ellickson, *Cities and Homeowner Associations*, 130 U. PA. L. REV. 1519, 1527 (1982) (explaining the current status of governing documents and judicial interpretation of those documents). See generally Sterk, *supra* note 81 (discussing how governing documents can implicitly and explicitly create and limit association power).

111. See Sterk, *supra* note 81, at 644-56.

homeowners' association or condominium.¹¹² Each owner may have an effective veto over certain socially valuable changes, particularly those that require amending the initial declaration.¹¹³

Even if the default boundary rules were inadequate, rational developers should prefer to offer value-maximizing governance rules that prevent people from blocking valuable adjustments.¹¹⁴ But anecdotal experience of CIC regimes suggests otherwise.¹¹⁵ Because owners underestimate the likelihood of change and overestimate the ease of future negotiations,¹¹⁶ they do not demand, and developers therefore have little incentive to offer, change-supporting governance rules. Indeed, developers who offer more flexible governance mechanisms may scare off those potential buyers who predictably, but inaccurately, appraise their future needs. Instead, voting rules in condominium or homeowners' associations continue to give excessive veto power to minorities of unit owners. Because of holdouts and bargaining difficulties, CICs may find themselves locked into low-value uses resulting in a tragedy of the anticommons.¹¹⁷

Current CIC laws represent an example of the one-way ratchet of fragmentation within a limited-exclusion anticommons. As costs rise from excessive veto rights, unit owners may develop informal institutions and norms that help to consolidate these rights of exclusion. More formally, legislatures may impose statutory solutions to abolish certain veto rights or courts may fashion judicial supervision rules to the same effect. But, if boundary mechanisms fail to emerge, CICs may fall further and further behind their productivity frontier.

112. See UNIF. PLANNED COMMUNITY ACT § 52-118, 74 U.L.A. § 2-118 (Supp. 1981) (providing a statutory authorization for the modification of covenants by less than unanimous consent); cf. Susan F. French, *Toward a Modern Law of Servitudes: Reweaving the Ancient Strands*, 55 S. CAL. L. REV. 1261, 1317 (1982) (recommending that the change-of-circumstances doctrine apply to requests for modification of covenants).

113. See CRIBBET & JOHNSON, *supra* note 13, at 390 ("If all parties agree, they of course can modify covenants to accommodate new conditions. But this may be difficult to accomplish when there are many parties, as there are in the large subdivision or condominium. One dissenter can block change.").

114. See generally Susan F. French, *The Constitution of a Private Residential Government Should Include a Bill of Rights*, 27 WAKE FOREST L. REV. 345 (1992) (exploring legal dilemmas raised by CICs).

115. Rick Hills and I are working on an article in which we will explore whether a hidden cost of condominium regulations may be that people now block each other too much and waste some of the potential of resources held in condominium form.

116. See Lee Ross & C.A. Anderson, *Shortcomings in the Attribution Process: On the Origins and Maintenance of Erroneous Social Assessment*, in JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES 129 (D. Kahneman et al., eds., 1982).

117. There may be countervailing community-reinforcing benefits from locking people together and forcing them to learn to deal with each other. Indeed, legal intervention may paradoxically be counterproductive by undermining the social capital that the community has created. See Richard H. Pildes, *The Destruction of Social Capital Through Law*, 144 U. PA. L. REV. 2055, 2067 (1996).

3. *Overlapping Jurisdictions*

Just as CIC owners and developers underestimate evolution in their communities,¹¹⁸ master planners and zoners similarly fail to anticipate change.¹¹⁹ But public systems of local zoning have had many decades to build in flexibility mechanisms that can prevent individuals from exercising excessive veto power. For example, if home offices or satellite dishes were to become necessary accoutrements of the good life, then a majority vote or administrative decision would be able to amend zoning rules or grant variances in response.¹²⁰ While the process of adjusting old public plans to new social realities varies from community to community, an overarching theme links the public decisionmaking mechanisms: No individual can successfully hold out to block change.

Nevertheless, zoned communities can create a tragedy of the anticommons by giving too many neighbors veto rights over reasonable uses of land or by empowering too many overlapping jurisdictional bodies. William Fischel has documented how the California Supreme Court paralyzed land use development and excluded affordable housing by creating a full-exclusion anticommons that gave unlimited numbers of individuals the right to stop any particular development without bearing the costs:

Had the court redistributed ownership from *A* to *B*, the Coase theorem holds that the efficiency effects should be nil. . . . But in depriving private owners of the right to develop their property, the court did not choose any particular party to receive those rights. It redistributed development rights from *A* to *B*, *C*, *D*, and the rest of an indefinitely long alphabet.

The California court changed the legal rules so that any number of parties could stop a given development up to the moment at which it was physically improved. . . . California developers, who had once been able to bargain with a local government and a finite

118. As John Cribbet and Corwin Johnson note:

Drafters of real covenants and equitable servitudes, as well as other documents, often fail to address expressly events and circumstances that later occur. . . . One obvious approach is to allow modification upon approval by fewer than all of the parties. But even having to obtain approval by a simple majority of owners of lots might be unduly burdensome.

CRIBBET & JOHNSON, *supra* note 13, at 389-90.

119. See, e.g., Jan Z. Krasnowiecki, *Abolish Zoning*, 31 SYRACUSE L. REV. 719, 719 (1980) (arguing that effective advance planning and zoning of communities is impossible).

120. Cf. Carol M. Rose, *Planning and Dealing: Piecemeal Land Controls as a Problem of Local Legitimacy*, 71 CAL. L. REV. 839, 892-93 (1983) (applauding the tendency of local variance boards to mediate disputes informally).

set of state agencies, found that they had to bargain with parties whose existence they were previously unaware of.¹²¹

Even projects that are fully cost-justified and desirable from environmental, neighborhood, and regulatory perspectives may not go forward because of the bargaining challenge that is endemic to full-exclusion anticommons property.¹²² The tragedy of the anticommons that has emerged imposes costs on individuals far beyond those seeking affordable housing in California. As Fischel notes, "the higher statewide housing prices that resulted have adversely affected the national economy by distorting the location decisions of firms and households."¹²³

III. THE BOUNDARY PRINCIPLE IN PROPERTY THEORY

Across a range of disparate doctrines, the common law of property has long been concerned with fixing the boundaries between private property on the one hand and commons and anticommons property on the other. Why has property theory focused so little on these private-law mechanisms that prevent tragedies of the commons and anticommons? This Part develops two closely intertwined answers. First, the metaphors that theorists use to understand property have blinded them to the existence of boundary principles in general, and second, the categories that theorists use have led them to overlook anticommons property boundaries in particular.¹²⁴

121. WILLIAM A. FISCHEL, *REGULATORY TAKINGS: LAW, ECONOMICS, AND POLITICS* 251 (1995). This discussion raises the difficult problem of scale. In a residential subdivision, each plot is ordinary private property, but collectively the community may be an anticommons if bargaining problems prevent agreement, say to convert the land to its most valuable use as a car factory. How practically should we distinguish anticommons fragments from ordinary private property? See *infra* Subsection IV.D.3 (discussing the problem of scale).

122. As few as two regulatory bodies may create this type of problem when they resist coordination. For example, after a lengthy process, Los Angeles gave a developer final approval to build. Then, the California Coastal Commission asserted jurisdiction over the same subject matter and stopped the development for two more years. The California Supreme Court recently denied the landowner's taking claim. See *Landgate v. California Coastal Comm'n*, 953 P.2d 1188 (Cal.), *cert. denied*, 119 S. Ct. 179 (1998). According to one account:

The takings case began in 1990, when Landgate Inc. purchased what it believed to be a buildable lot in the hills of Malibu.

... But when Landgate applied for a permit to build, the California Coastal Commission balked. The lot lines of Landgate's property, the commission noted, had never been approved by the commission and were thus illegal. As it happened, Los Angeles County ... had signed off on a reconfiguration of the lot lines. ...

... Landgate appealed, and [the court concluded that the CCC] was motivated by an "ongoing jurisdictional spat" between itself and the county.

Greg Mitchell, *Supreme Court Airs Takings, DNA Admissibility*, THE RECORDER, Feb. 11, 1998, at 1.

123. FISCHEL, *supra* note 121, at 252.

124. As Joseph Vining notes:

The first Section focuses on the costly effects of inadequate metaphors, particularly the switch from the thing-ownership to the bundle-of-rights image of property. The second Section identifies an asymmetry in property theory that has carried over into the Court's jurisprudence. While property law routinely bounds fragmentation on both sides of the property continuum, property theory has missed the anticommons/private property boundary.¹²⁵ The final Section explains why prior attempts to define the boundary principle have been limited and proposes an approach that may be more useful for courts and legislators.

A. *Property Metaphors and Property Boundaries*

Justice Cardozo once warned, "Metaphors in law are to be narrowly watched, for starting as devices to liberate thought, they end often by enslaving it."¹²⁶ According to the stylized history, people viewed property as a physical thing or a legal thing until this century, when lawyers recast it as an abstract bundle of legal relations.¹²⁷ Though this standard story has been taught to generations of law students¹²⁸ and is applied daily by judges, it is a thin account.¹²⁹ Neither metaphor adequately conveys the nuanced way law enforces property boundaries. In particular, the idea of property as things misses the complex internal relations among owners of a thing, while

Unsympathetic smiles may be evoked by talk today of a concept of property or indeed a concept of anything. So accustomed are we to concentrating on reasons of policy and on the conclusory nature of legal categories that we tend to forget how channeled we are by nothing more than a conceptual structure. . . . Time and the complexity of things make it impossible to do otherwise. There are limits to the movement of our minds, shared boundaries for which there is no better name in legal analysis than "concepts"—conclusions that we could question but choose not to, premises for ordered thought and communication. Certainly analysis of property interests has had limits beyond which we have chosen not to stray.

JOSEPH VINING, *LEGAL IDENTITY: THE COMING OF AGE OF PUBLIC LAW* 24 (1978).

125. Property boundaries could be defined along many dimensions. As used in this Article, boundaries differentiate commons and anticommons categories and leave aside other theoretically-fraught oppositions such as property versus contract, *in rem* versus *in personam* rights, traditional versus new property, private versus state property, and private versus socialist property.

126. *Berkey v. Third Ave. Ry.*, 155 N.E. 58, 61 (N.Y. 1926).

127. See ALEXANDER, *supra* note 31, at 311-13. Alexander traces the evolution of these metaphors:

After the beginning of the twentieth century, American legal intellectuals increasingly criticized the classical Blackstonian conception of property. . . . That conception . . . they thought [was] both inaccurate and disingenuous—inaccurate because it wrongly suggested it was possible for one person to have absolute freedom in the use and control of his things; disingenuous because it hid from view the political function of property.

Id. at 311.

128. See DUKEMINIER & KRIER, *supra* note 32, at 86 (discussing the bundle of rights).

129. See Grey, *supra* note 22, at 69.

the modern bundle metaphor suggests more fluidity than appears in existing property relations.

1. *Of Things, Physical and Legal*

Under the old metaphor, property involves the physical ownership of discrete, individually owned things,¹³⁰ an image symbolized by the medieval ceremony of “livery of seisin” which gathered the buyer and the seller of a land parcel in a field to exchange ownership by handing over a clod of dirt.¹³¹ This thing-ownership metaphor is conventionally summarized in Blackstone’s talismanic quotation that private property is “that sole and despotic dominion which one man claims and exercises over the external things of the world, in total exclusion of the right of any other individual in the universe.”¹³² Similarly, the idea of private property as a “legal thing,” which arises in part because ownership has no intrinsic form, has a lineage as ancient as the image of property as a “physical thing.” Fees, life estates, easements, and leases all represent complex legal things distinct from physical things.¹³³

In defining “private property,” the Supreme Court has long recognized that it does not receive guidance from the text of the Constitution,¹³⁴ a

130. For criticism of the conventional historical view of a period of absolutist control over property, see Gordon, *supra* note 15, at 96, who observes: “What strikes the backward-looking observer as curious is simply this: that in the midst of such a lush flowering of absolute dominion talk in theoretical and political discourse, English legal doctrines should contain so very few plausible instances of absolute dominion rights.”

131. See CRIBBET & JOHNSON, *supra* note 13, at 15; F.W. Maitland, *The Mystery of Seisin*, 2 L.Q. REV. 481 (1886).

132. 2 WILLIAM BLACKSTONE, COMMENTARIES *2. Blackstone’s views were rather less absolute. Together with other lawyers and lay people of the day, Blackstone was aware of the limits to the physicalist idea of private property. See, e.g., 3 BLACKSTONE, *supra* at *212-15 (discussing the law of trespass); *id.* at *217-18 (stating that when an owner wants to do something vexing to a neighbor, “it is incumbent on him to find some other place to do that act, where it will be less offensive”); see also Rose, *supra* note 15, at 603 (discussing Blackstone’s more nuanced conception of property); Ellickson, *supra* note 37, at 1362, n.237 (“Blackstone . . . would have admitted that his sentence . . . was hyperbolic. His treatise explicitly discussed, for example, a variety of legal privileges to enter private land without the owner’s consent.”).

133. See also 2 BLACKSTONE, *supra* note 132, at *20 (considering incorporeal hereditaments to be things despite awareness that “[t]heir existence is merely in idea and abstracted contemplation”); ALEXANDER, *supra* note 31, at 138-39 (explaining Blackstone’s view that property included intangible interests and incorporeal hereditaments). As one commentator has noted, “If you can think about something which is attached to something else without thinking about what it is attached to, then you have what is called a legal mind.” Thurman W. Arnold, *Criminal Attempts—The Rise and Fall of an Abstraction*, 40 YALE L.J. 53, 58 (1930) (quoting Thomas Reed Powell).

134. In *Board of Regents v. Roth*, 408 U.S. 564 (1972), Justice Stewart wrote what has become the Court’s paradigmatic position on finding the correct definition of property: “Property interests, of course, are not created by the Constitution. Rather, they are created and their dimensions are defined by existing rules or understandings that stem from an independent source such as state law” *Id.* at 577.

document that once mentions and nowhere defines the term.¹³⁵ Instead, the Court relies primarily on state law and background conceptions,¹³⁶ which in turn incorporate shifting property metaphors such as thing-ownership.

From pre-Constitution days through the end of the nineteenth century, the Court only mandated compensation when the government completely took physical things.¹³⁷ Fragments of physical or legal things were not protected as private property. For example, in *Transportation Co. v. Chicago*,¹³⁸ the Court stated: "[A]cts done in the proper exercise of governmental powers, and not directly encroaching upon private property, though their consequences may impair its use, are universally held not to be a taking within the meaning of the constitutional provision."¹³⁹ Similarly, in the *Legal Tender Cases*,¹⁴⁰ the Court wrote that the Takings Clause "has always been understood as referring only to a direct appropriation, and not to consequential injuries resulting from the exercise of lawful power. It has never been supposed to have any bearing upon, or to inhibit laws that indirectly work harm and loss to individuals."¹⁴¹

Although superseded in property theory and constitutional decisionmaking, the thing-ownership metaphor continues today as a theme

135. U.S. CONST. amend. V ("[N]or shall private property be taken for public use, without just compensation."). The Takings Clause is made applicable to the states through the Fourteenth Amendment. See *Chicago, B. & Q. R.R. v. City of Chicago*, 166 U.S. 226, 239 (1897). While the Constitution mentions "private property" once, it mentions "property" several other times, including the Due Process Clause of the Fifth Amendment, which reads "nor shall any person be . . . deprived of . . . property, without due process of law," U.S. CONST. amend. V, and Section 1 of the Fourteenth Amendment, which reads "nor shall any State deprive any person of . . . property, without due process of law," U.S. CONST. amend. XIV, § 1.

136. See, e.g., *PruneYard Shopping Ctr. v. Robbins*, 447 U.S. 74, 84 (1980) ("Nor as a general proposition is the United States, as opposed to the several States, possessed of residual authority that enables it to define 'property' in the first instance."); Annotation, 1 A.L.R. FED. 479, 482 (1969) (noting that courts refer to state law to define "property" in condemnation proceedings by the United States).

137. See William Michael Treanor, *The Original Understanding of the Takings Clause and the Political Process*, 95 COLUM. L. REV. 782, 782 (1995) ("The original understanding of the Takings Clause of the Fifth Amendment was clear on two points. The clause required compensation when the federal government physically took private property, but not when government regulations limited the ways in which property could be used.").

138. 99 U.S. 635 (1879).

139. *Id.* at 642.

140. 79 U.S. (12 Wall.) 457 (1871).

141. *Id.* at 551. Arguably, the earliest modification in the Court's approach came in *Pumpelly v. Green Bay Co.*, 80 U.S. (13 Wall.) 166 (1872), in which a company acting under state authority flooded private land. The Court observed: "It would be a very curious and unsatisfactory result, if . . . it shall be held that if the government refrains from the absolute conversion of real property to the uses of the public it can destroy its value entirely . . . because, in the narrowest sense of that word, it is not *taken* for the public use." *Id.* at 177-78. The operative issue in *Pumpelly* may not have been economic value per se, but rather that the flooding worked "directly," by contrast with the *Transportation Cases* where it worked "indirectly." *Pumpelly* remained an anomaly for several generations, while the *Legal Tender* approach was dominant. Nevertheless, the modern Court has used the case to support reconceptualizing property in terms of value. See Treanor, *supra* note 137, at 795 n.74 (discussing these cases).

in popular understanding.¹⁴² Under this view, the boundaries of old-fashioned private property are relatively transparent. It is easy to think of a house or a field or a farm as a thing because resources defined on this scale can be put to productive use.¹⁴³ By contrast, a “right to use a square inch for philosophizing on Tuesdays” does not appear to be a thing because this fragment does not correspond to an ordinary use of land.¹⁴⁴ The problem with the thing-ownership metaphor is that it does not help identify boundaries of complex governance arrangements and modern intangible property.¹⁴⁵

2. *Bundle of Legal Relations*

The metaphoric shift from thing-ownership to bundle of relations can be traced to the late 1800s.¹⁴⁶ Though its modern version is usually attributed to Wesley Hohfeld, he never mentions a “bundle of rights.”¹⁴⁷ On the other hand, he did develop the now standard idea that property comprises a complex aggregate of social and legal relationships made up of rights, privileges, powers, and immunities.¹⁴⁸ This vision contrasts with “the simple and nonsocial relation between a person and a thing that Blackstone’s description suggested.”¹⁴⁹ The Hohfeldian view moved

142. Bruce Ackerman explains much of Supreme Court takings doctrine by contrasting the “Ordinary Observer’s” understanding of physical things with the observer’s uncertainty regarding “social property.” ACKERMAN, *supra* note 22, at 99-100. Alexander argues, however, that the Ordinary Observer also was always familiar with ideas of social property, such as legal things and legal relations. See Gregory Alexander, *The Concept of Property in Private and Constitutional Law: The Ideology of the Scientific Turn in Legal Analysis*, 82 COLUM. L. REV. 1545, 1548 (1982).

143. The scale of productive use generally tracks the things that society recognizes as private property. See Michelman, *supra* note 8, at 9 (“Private property requires rules governing the composition of allowable ownership claims—or, as it might be described, for ‘packaging’ marketable goods into legally cognizable objects of ownership.”); see also *infra* Section IV.D.3 (discussing scale).

144. Michelman, *supra* note 8, at 9-10.

145. See, e.g., Heller, *supra* note 8, at 679 n.259 (noting the existence of a “Brady Bunch anticommons”); Heller & Eisenberg, *supra* note 5, at 698 (discussing the anticommons problem in biomedical research).

146. The earliest use of the term “bundle of rights” appears to be from John Lewis, in his 1888 book, *A Treatise on the Law of Eminent Domain*: “The dullest individual among the people knows and understands that his property in anything is a bundle of rights.” See ALEXANDER, *supra* note 31, at 322 & 455 n.40 (quoting Lewis); see also J.E. Penner, *The “Bundle of Rights” Picture of Property*, 43 UCLA L. REV. 711, 713 n.8 (1996) (tracing the metaphor).

147. ALEXANDER, *supra* note 31, at 319.

148. See RESTATEMENT OF PROPERTY §§ 1-4 (1936).

149. ALEXANDER, *supra* note 31, at 321. Even in Blackstone’s day, people recognized that private property also comprises “legal relations,” though this view was a less salient dimension for fragmenting resources. For example, rules permitting entry on another’s land in an emergency always tempered the most absolute ownership. See 3 BLACKSTONE, *supra* note 132, at *212-14.

quickly from legal theory into the 1936 *Restatement of Property* and from there into mainstream scholarship and judicial decisionmaking.¹⁵⁰

For example, the *American Law of Property* defines private property to be "an aggregate of legal relations which has economic or sale value if transfer be allowed."¹⁵¹ Similarly, conflating rights with goods, a standard economic definition states: "With private property, two persons may exchange rights to goods on whatever terms they mutually accept. The exchange . . . is unrestricted in the sense that any person who prefers some other mixture . . . can ask for it. . . . In the open market, property rights can be privately reshuffled and exchanged"¹⁵² Nevertheless, as Part II demonstrated, Anglo-American law restricts private property to a few allowable forms, each bounded by restraints on fragmentation.¹⁵³ The pervasive presence of boundary rules challenges legal and economic theories that suggest unstructured fluidity to private property. Instead, the overwhelming evidence suggests that the notion of an open-ended bundle of property rights is wrong.

*Pennsylvania Coal Co. v. Mahon*¹⁵⁴ marks the beginning of the Court's dramatic shift away from thing-ownership (and its built-in boundaries) toward the bundle metaphor (and its more diffuse boundaries).¹⁵⁵ Justice

150. Since its first adoption by the Court in the early 1940s, the bundle metaphor has been making upward progress in property cases to near ubiquity. On the crudest empirical note, a January 1998 Lexis search shows that the phrase "bundle of rights" appears in four state and federal cases before 1940. Between 1940 and 1960, 133 cases use the term. Over the next 20 years, 246 more cases appear. Since 1980, 775 cases have used the term. While these figures give a sense of the metaphor's rise, they should be interpreted with caution because they miss cases that do not use the precise search terms, include some cases that use them in an unrelated sense, and do not control for the secular rise in published opinions. See also Penner, *supra* note 146, at 713 n.8 (describing the rise in use of this metaphor).

151. 6 ALP, *supra* note 21, § 26.1 n.1; see also RESTATEMENT OF PROPERTY, *supra* note 148, §§ 1-4 (adopting the Hohfeldian definition of property); Grey, *supra* note 22, at 69 (criticizing the modern "bundle of rights" perspective).

152. ARMEN A. ALCHIAN, PRICING AND SOCIETY 7 (Institute of Econ. Affairs, Occasional Paper No. 17, 1967). Amplifying this definition, Richard Posner writes: "Some economists, indeed, use the term property right to describe virtually every device—public or private, common law or regulatory, contractual or governmental, formal or informal—by which divergences between private and social costs or benefits are reduced." RICHARD A. POSNER, ECONOMIC ANALYSIS OF LAW 53 (5th ed. 1998); see, e.g., Armen Alchian & Harold Demsetz, *The Property Rights Paradigm*, 33 J. ECON. HIST. 16 (1973); Eirik G. Furubotn & Svetozar Pejovich, *Introduction to THE ECONOMICS OF PROPERTY RIGHTS* 1-9 (Eirik G. Furubotn & Svetozar Pejovich eds., 1974) (offering standard economic definitions of property).

153. Rudden quotes a range of great jurists on the point: Oliver Wendell Holmes said, "new and unusual burdens cannot be imposed on land." Rudden, *supra* note 62, at 244. L.C. Brougham said, "There are certain known incidents to property and its enjoyment But it must not therefore be supposed that interests of a novel kind can be devised" *Id.* B. Wilde commented: "It is a well settled principle of law that new modes of holding and enjoying real property cannot be created." *Id.*

154. 260 U.S. 393 (1922).

155. For discussions of *Mahon*, see Joseph F. DiMento, *Mining the Archives of Pennsylvania Coal: Heaps of Constitutional Mischief*, 11 J. LEGAL HIST. 396 (1990); Lawrence M. Friedman, *A Search for Seizure: Pennsylvania Coal v. Mahon in Context*, 4 L. & HIST. REV. 1 (1986); E.F.

Holmes's majority opinion in *Pennsylvania Coal* represents the view "that property is properly viewed as value, not physical possession, and that the Takings Clause should therefore protect more than physical possession."¹⁵⁶ This new view disregarded earlier constitutional understandings and launched the Court on its modern struggle to protect an increasing number of fragment types as private property.

A generation later, in *United States v. General Motors*,¹⁵⁷ the Court explicitly adopted the unbounded Hohfeldian perspective for the first time:

It is conceivable that ["property"] was used in its vulgar and untechnical sense of the physical thing with respect to which the citizen exercises rights recognized by law. On the other hand, it may have been employed in a more accurate sense to denote the group of rights inhering in the citizen's relation to the physical thing, as the right to possess, use and dispose of it. In point of fact, the construction given the phrase has been the latter. . . . The constitutional provision is addressed to every sort of interest the citizen may possess.¹⁵⁸

Immediately after *General Motors*, however, the Court retreated in *United States v. Willow River Power Co.*,¹⁵⁹ writing that, "not all economic interests are 'property rights'; only those economic advantages are 'rights' which have the law back of them, and only when they are so recognized may courts compel others to forbear from interfering with them or to compensate for their invasion."¹⁶⁰ Through the combination of *General Motors* and *Willow River Power*, the Court framed the debates on the boundaries of private property, but these debates then lay dormant for another generation. The Court's full adoption of the bundle metaphor is of quite recent vintage,¹⁶¹ and it comes just as the metaphor is losing its place in property theory.

While the modern bundle-of-legal relations metaphor reflects well the possibility of complex relational fragmentation, it gives a weak sense of the "thingness" of private property. Conflating the economic language of entitlements with the language of property rights causes theorists to collapse inadvertently the boundaries of private property. As long as

Roberts, *Mining with Mr. Justice Holmes*, 39 VAND. L. REV. 287 (1986); and Carol M. Rose, *Mahon Reconstructed: Why the Takings Issue Is Still a Muddle*, 57 S. CAL. L. REV. 561 (1984).

156. Treanor, *supra* note 137, at 802.

157. 323 U.S. 373 (1944).

158. *Id.* at 377-78 (footnote omitted).

159. 324 U.S. 499 (1945).

160. *Id.* at 502.

161. Oddly, the Court in *Lucas* claims that its takings jurisprudence "has traditionally been guided by the understandings of our citizens regarding the content of, and the State's power over, the 'bundle of rights' that they acquire when they obtain title to property." *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003, 1027 (1992).

theorists and the Court rely on the bundle-of-legal-relations metaphor, they need some analytical tool to distinguish things from fragments, bundles from rights, and private from nonprivate property. It may be time to introduce a metaphor that better expresses the boundaries of new limited-access and limited-exclusion ownership forms.¹⁶²

B. *Boundaries and Property Categories*

In practice, as Part II demonstrated, private-law property boundaries keep people from maintaining too many overlapping rights of use in a commons and too many rights of exclusion in an anticommons. Property theorists, however, have only recognized the commons/private half of this continuum. This Section expands on my earlier work by arguing that property theory should recognize the anticommons/private boundary. The payoff from correcting the asymmetry in property theory comes in Part IV, where the boundary principle helps unknot confused constitutional decisionmaking.

1. *The Commons/Private Boundary*

The dichotomy of property categories is longstanding in property law and theory.¹⁶³ In modern bundle-of-rights terms, Frank Michelman has defined commons property as “a scheme of universally distributed, all-encompassing privilege . . . that is *opposite* to [private property].”¹⁶⁴ Similarly, modern economic analysis of property has “tended to classify ownership status into the categories *all and none*, the latter being termed ‘common property’—property that has no restrictions placed on its use.”¹⁶⁵

162. As the bundle-of-rights image waxes in judicial decisionmaking, it is waning in property theory. In separate conversations, Gregory Alexander suggested that a new metaphor is due, and Brian Simpson argued that the time has come for a rigorous philosophical analysis that takes apart Hohfeld and Honoré. See also Penner, *supra* note 146, at 819 (“I believe in giving dead concepts [such as the bundle of rights metaphor] a decent burial.”).

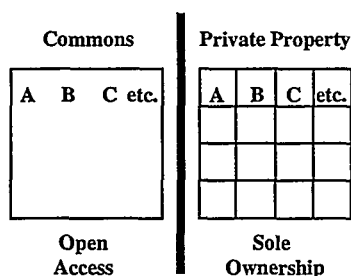
163. See Carol M. Rose, *Property as Storytelling: Perspectives from Game Theory, Narrative Theory, Feminist Theory*, 2 YALE J.L. & HUMAN. 37, 52-53 (1990) (dissecting the assumptions and contradictions in conventional property narratives that obscure the move from commons to private property).

164. Michelman, *supra* note 8, at 9 (emphasis added).

165. YORAM BARZEL, *ECONOMIC ANALYSIS OF PROPERTY RIGHTS* 71 (1989) (emphasis added). Economic theorists of property have detailed the mechanisms by which people create private property from commons resources. See, e.g., Terry L. Anderson & P.J. Hill, *The Evolution of Property Rights: A Study of the American West*, 18 J.L. & ECON. 163 (1975) (discussing western land); Harold Demsetz, *Towards a Theory of Property Rights*, 57 AM. ECON. REV. 347, 350-53 (1967) (discussing fur trappers); John Umbeck, *A Theory of Contract Choice and the California Gold Rush*, 20 J.L. & ECON. 421 (1977) (analyzing gold mines). Demsetz suggests that private property emerges to internalize externalities when technological, population and other pressures strain the capacity of common resources. See Demsetz, *supra*. But he misses the

According to these definitions, by capturing common fish, foxes, or oil, an individual signals the conversion of a thing to private property in a way that others recognize.¹⁶⁶ The simple dichotomy implies that a resource crosses *some* boundary when it moves from commons to private property, but it tells us little about either the particular contours of that boundary, or about the range of private property forms that exist in the world (Figure 2).

FIGURE 2. THE SIMPLE PROPERTY THEORY DICHOTOMY



Moving beyond the simple dichotomy reveals that the term “commons” itself covers a wide range of ownership forms. Commons resources may be arranged along a continuum from open-access to limited-access, with sole ownership as the boundary.¹⁶⁷ In an open-access commons such as the ocean or the air, everyone owns a right to use the resource. The government may destroy open-access rights of use without compensating owners; without, that is, crossing the boundary into a “taking” of private property. When a regulation closes access to an ocean fishery and then issues fishing quotas, or stops a factory from polluting and sells emissions certificates, the government has wholly taken privately-owned rights of

possibility that government policies, market failures, and individual preferences may cause excess fragmentation.

166. See *Pierson v. Post*, 3 Cai. R. 175 (N.Y. 1805) (resolving the ur-fox-capture dispute); Carol M. Rose, *Possession as the Origin of Property*, 52 U. CHI. L. REV. 73, 76 (1985) (suggesting that the rule-of-capture signals notice to others of one’s intent to convert a resource to private use). It is difficult to imagine a commons in which property remains common even after an individual appropriates it. See Duncan Kennedy & Frank Michelman, *Are Property and Contract Efficient?*, 8 HOFSTRA L. REV. 711 (1980) (considering the possibility); see also Heller, *supra* note 8, at 675-76 (same). Even on the high seas, an individual may be able to call upon the power of a state to protect a private right of use against pirates who take the notion of commons property to its logical extreme. See RESTATEMENT (THIRD) OF FOREIGN RELATIONS LAW OF THE UNITED STATES § 404 (1987) (finding that states have universal jurisdiction to “define and prescribe punishment for certain offenses recognized by the community of nations as of universal concern, such as piracy”).

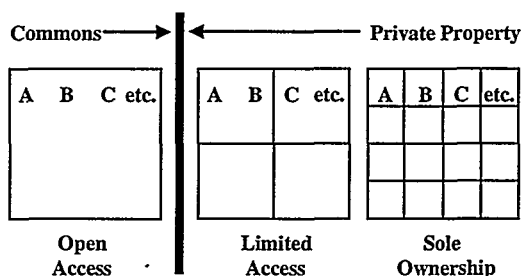
167. See Ellickson, *supra* note 37, at 1322 (distinguishing open, horde, and group access in his typology of land ownership).

use.¹⁶⁸ Yet people generally do not believe, and the Constitution would not support the claim, that private property was taken when such regulations prevent resources from being wasted in a tragedy of the commons. Such regulations are seen as creating rather than destroying private property.

On the other hand, in a limited-access commons, a bounded group controls a resource. People often view rights in a limited-access commons as each comprising private property. A few children, for example, may jointly inherit a parent's house. Anti-fragmentation mechanisms, such as partition rules, allow owners to create separate private property and do not allow the government to destroy the cotenancies without compensation.¹⁶⁹

The hard cases for determining the boundary between private and commons property occur when there are not clear decisionmaking rules or institutions that can aggregate individual preferences and put resources to productive use. This decisionmaking breakdown may occur, for example, when a large, indeterminate, or informal group of owners controls a resource in a limited-access commons. On the boundary itself, lay intuitions and expectations tip towards neither the limited-access nor the open-access outcome. When a legislature acts to avoid a tragedy of the commons in such a case, what factors should a court consider in deciding whether private property was taken? By including limited-access forms, Figure 3 makes visible one set of boundary problems.

FIGURE 3. THE CONTINUUM FROM OPEN ACCESS TO SOLE OWNERSHIP



The familiar paradigm of private property appears when a sole owner, A, controls all use rights to a productively-scaled resource. In an open-access commons, owners A, B, C, etc. each have rights to use, and the

168. See Clean Air Act, 42 U.S.C. §§ 7651b-7651o (1994) (creating tradeable pollution allowances in sulfur dioxide); Peter Passell, *U.S. States To Allot Fishing Rights in Coastal Waters to Boat Owners*, N.Y. TIMES, Apr. 22, 1991, at A1 (noting reallocation of fishing rights).

169. See CRIBBET & JOHNSON, *supra* note 13, at 114. When uses irreconcilably conflict, owners can divide their cotenancies into sole ownership. However, physical "partition in kind" can create uneconomically small lots. To avoid a tragedy of the anticommons, "partition by sale" allows judges the alternative of selling the undivided resource and then dividing up money among co-owners. *Id.*; see also *supra* note 13.

resource is not necessarily scaled for productive use. A tragedy of the commons may occur when some social or technological change increases the intensity of each rightholder's use.¹⁷⁰ In the intermediate, limited-access case, a bounded number of owners, here *A* and *B*, can each use the resource, neither can exclude the other, and either can exclude outsiders. The larger box that *A* and *B* inhabit suggests that they may create a limited-access commons to exploit gains from increasing the scale of resource use, but there is no necessary correlation between the number of commons owners and the scale of resource use. Whether the rights of *A* and *B* are on the commons or private side of the boundary depends on many familiar factors in takings analysis, including whether the internal governance rules of the limited-access commons generally prevent the occurrence of a tragedy of the commons.

2. *The Anticommons/Private Boundary*

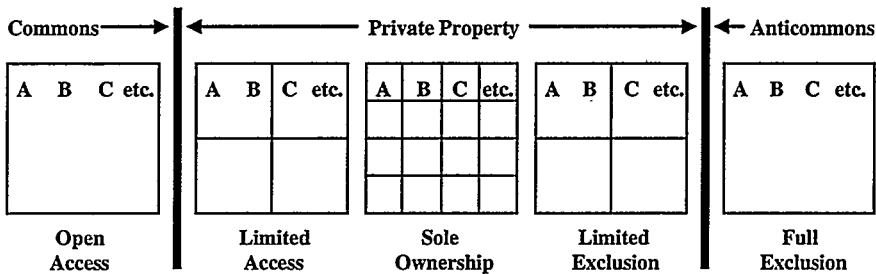
The familiar continuum of property forms recognizes the existence of a boundary where people fragment private property into a commons with too many users, but not where they fragment it so that there are too many excluders. Parsing the boundaries of private property requires both commons and anticommons categories because people can waste resources equally through overuse and underuse. As Part II has shown, a range of modern property doctrines respond to the problem of over-fragmentation and to the waste that may occur when too many people may block each other from using a productively-scaled resource.

Recapitulating Figure 1 from the Introduction, Figure 4 incorporates anticommons property and shows how commons and anticommons property together bracket the ways that private property can fragment. If people fragment private property so that too many people can exclude each other, then the resource may be wasted in a tragedy of the anticommons.¹⁷¹

170. This shift in intensity of use parallels the story Demsetz tells. *See* Demsetz, *supra* note 165, at 350-53. According to the standard theory of the shift, the switch to private property also encourages conservation of the resource.

171. *See* Heller, *supra* note 8, at 677.

FIGURE 4. THE BOUNDARIES OF PRIVATE PROPERTY



Like commons property, anticommons property may also be arrayed along a continuum from full to limited exclusion.¹⁷² In a full-exclusion anticommons, where everyone can block everyone else and no one can use the valuable resource, the likelihood of a tragedy of the anticommons is relatively high, and resistance to government rebundling of rights without compensation may be low. However, boundary problems are more complex in a limited-exclusion anticommons where a closed number of owners can block each other from using a resource. In such cases, as with condominium owners blocking changes to covenants, owners hold the resource in anticommons form vis-à-vis each other, but as private property vis-à-vis the outside world. Owners who cannot reach agreement to use such a resource may nevertheless expect compensation for a regulation that abolishes their rights to exclude.

Paralleling the dilemma on the commons side, the difficult cases involve finding the boundary of viable private ownership beyond which a tragedy of the anticommons is likely to arise and persist. Bargaining breakdowns seem particularly likely when a large, indeterminate, or informal group of owners can exclude each other from using the resource. The problem for lawmaking is to acknowledge that such a boundary exists and then to determine when to characterize ownership as falling on the private or anticommons side of the boundary.

C. Defining the Boundary Principle

Despite the ambiguity that the dominant metaphors encourage, theorists have recognized that private property is delimited by some boundaries. Some theorists discuss these boundaries using the language of alienability, or of alienability versus marketability. Others rely upon Michelman's opposition of "nonintervention" and "internalization biases." Each of

172. See *id.* at 669 n.218.

these property terms describes an aspect of the boundary rules identified in Part II.

1. *Previous Definitions*

The most common approach to bounding private property has been through the language of alienability. By the nineteenth century, alienability had become “the overriding topic of concern to American property lawyers.”¹⁷³ While nineteenth-century scholars justified increasing alienability to root out feudal remnants, scholars today typically claim that unbounded alienability helps to ensure efficient resource use.¹⁷⁴

Even after centuries of constant use, or perhaps because of it, alienability is a poorly defined term that often obscures rather than highlights boundaries. Does it increase or decrease alienability to allow an owner to divide her fee simple absolute into a fee simple determinable followed by a possibility of reverter? Allowing fragmentation increases alienability for the current owner, and possibly for future owners if the fragmented interests are alienable. If one focuses on an individual’s current freedom to alienate a fee simple and assumes that fragments are easily tradeable, then boundary rules may appear as anachronistic targets for property reformers. On the other hand, such fragmentation decreases alienability from a social standpoint because trading future interests can be costly and future owners do not have access to unfragmented fee simples. Thus, it is rarely clear whether alienability refers to a current or future owner’s freedom to dispose of undivided ownership. One consequence of this ambiguity is that boundary rules are sometimes shoehorned into the conventional framework by being labeled as “rules preventing indirect restraints on alienation.”¹⁷⁵

173. ALEXANDER, *supra* note 31, at 120. Property lawyers in this era were concerned with overthrowing feudal remnants in the law through which the landed classes could retain dead hand control of their estates, and, in James Kent’s words, “leave an accumulated mass of property in the hands of the idle and the vicious.” 4 KENT, *supra* note 69, at 19; *see also* ALEXANDER, *supra* note 31, at 146 (discussing Kent). Lawrence Friedman notes that during the first part of the 19th century, “fear of land monopoly and land dynasties haunted the lawmakers,” LAWRENCE M. FRIEDMAN, *A HISTORY OF AMERICAN LAW* 240 (2d ed. 1985), and that in the latter part of the century, “the dominant theme of American land law was that land should be freely bought and sold.” *Id.* at 412.

174. *See* 6 ALP, *supra* note 21, § 26.1 (“Since an early date in the history of the English common law it has been thought socially and economically desirable that the owner of a present fee simple . . . should have the power to transfer his interest.”). According to the *American Law of Property*, the main social and economic objections to direct restraints on alienation are that if such restraints were valid, over time, resources would likely be wasted because they would be taken out of the stream of commerce, improvements would be discouraged, wealth might become more concentrated, and creditors potentially could be misled. *See id.* § 26.3.

175. *See, e.g.*, CRIBBET & JOHNSON, *supra* note 13, at 82-85 (conflating discussion of the Rule Against Perpetuities with the rules against restraints on alienation). This nomenclature is odd because anti-fragmentation rules operate by *limiting* individuals’ current choices regarding

A more nuanced way to describe the same problem is through the opposition of alienability and marketability.¹⁷⁶ Here, alienability refers to an individual's freedom to fragment and transfer ownership today, while marketability refers to the rules that keep property available for future productive use by limiting individual choice. While these oppositions track well the divergence between individual choice and social welfare, they too miss both the mechanisms that unify pro-marketability doctrines and the continuum of property relations.

Michelman has offered a persuasive analysis of the economic mechanisms that underlie anti-fragmentation doctrines. He suggests that the ideal type of private property formally contains a principle of "market-facilitating composition."¹⁷⁷ This principle comprises both a "non-intervention bias" analogous to the idea of alienability and an "internalization bias" that tracks marketability.¹⁷⁸ Michelman argues that these two biases together create a simple, formal decision rule necessary to characterize a private-property regime. According to this rule: "[T]he state may leave composition unregulated; and insofar as the state ever does regulate composition, it does so only by rules that conform to the principle of internalization—that is, the rules are designed with a view to accommodating coordination through small-number transactions."¹⁷⁹ This market-facilitating principle abstracts away from real world property regimes that, as Michelman notes, "abound[] in restrictions on decomposition of titles."¹⁸⁰

While he usefully describes the economic mechanisms of the boundary principle at a high level of abstraction, Michelman is not concerned with the practical scope of real-world fragmentation problems. Moreover, he does not look beyond economic explanations to the "thingness" of private property, and to the psychological mechanisms that animate these persistent popular conceptions. The nonintervention/internalization opposition, like

alienability. By contrast, rules preventing direct restraints, which are a relatively minor part of the law, *promote* alienability by current owners. *See* 6 ALP, *supra* note 21, § 26.3. Direct restraints include the disabling form, "*O* grants Blackacre to *A*, and *A* may not sell"; the forfeiture form, "*O* to *A*, but if *A* tries to transfer, then to *B*"; and the promissory form "*O* to *A*, and *A* promises not to transfer." *DUKEMINIER & KRIER, supra* note 32, at 223-24.

176. *See* ALEXANDER, *supra* note 31, at 145 ("Alienability is not necessarily the same as marketability."); GOLDSTEIN, *supra* note 16, at 474; *cf.* Sterk, *supra* note 81, at 644-59 (suggesting the contrast between "freedom of contract" and "freedom from freedom of contract" as a way of discussing boundary rules in the servitudes context).

177. Michelman, *supra* note 8, at 20. He notes that this principle necessarily applies to reassignment as well as to the initial acquisition of private property. *See id.* at 17-20.

178. *Id.* at 20.

179. *Id.* at 19.

180. *Id.* at 15. Following Michelman, Ellickson notes that "[t]o deter destructive decompositions of property interests, the Anglo-American legal system has developed a complex set of paternalistic rules. . . . Rules that govern the interpretation and termination of sub-fee interests also tilt against creation and continuation of interests 'repugnant to the fee.'" Ellickson, *supra* note 37, at 1374.

the alienability/marketability distinction, misses the complex governance relations within modern property forms, the emerging divergence between the private and public law of property, and the distinct commons/private and private/anticommons boundaries. Building on Michelman's work, I understand the boundary principle as recognizing both the market-facilitating mechanisms that Michelman identifies and the noneconomic factors (justice-based, community-building, psychological, historical) that help constitute modern understandings of private property.

2. *A New Approach*

The boundary principle can be defined as a practical, real-world corollary to sole ownership.¹⁸¹ Sole ownership refers to the relationship between an owner or group of owners of a resource and the external world. The boundary principle concerns primarily the internal relations among multiple owners of a single resource. When resources are so fragmented that internal governance mechanisms predictably fail and multiple owners cannot productively manage the resource with respect to the external world, then the ownership fragments are no longer usefully protected as private property.

In a transaction-costless world free of any cognitive biases, boundary rules would be less crucial because people could bargain perfectly to assemble fragmented resources and put them to their highest valued uses.¹⁸² Boundary rules would play no role in improving allocative efficiency. They would instead have solely distributional consequences (which are important in their own right). However, as Part II has shown, it is because we live in a world of transaction costs, strategic behaviors, and cognitive failures,¹⁸³ that resources may be wasted even though no individual fragment is strictly inalienable.¹⁸⁴

Anti-fragmentation mechanisms respond to predictable bargaining failures that lead owners to waste jointly controlled resources. To be efficient as an economic institution and useful as a theoretical construct, private property requires the practical mechanisms of the boundary

181. In distilling the formal elements of private property, Michelman notes the fundamental role of sole ownership: "The rules must allow that at least some objects of utility or desire can be fully owned by just one person." Michelman, *supra* note 8, at 5.

182. See R.H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1, 2-8 (1960); cf. R.H. COASE, *THE FIRM, THE MARKET, AND THE LAW* 174 (1988) (recognizing the centrality of transaction costs).

183. See Richard Craswell, *Passing on the Costs of Legal Rules: Efficiency and Distribution in Buyer-Seller Relationships*, 43 STAN. L. REV. 361, 385-91 (1991) (discussing the roles of framing and wealth effects in undermining Coasian bargains).

184. See Heller, *supra* note 8, at 676.

principle just as much as it requires the formal possibility of sole ownership.

3. *From Property Law to Constitutional Theory*

As Part II demonstrated, the private law of property has developed a series of practical rules that sweep away excessively fragmented rights of use and of exclusion by fixing boundaries. Until recently, the familiar metaphor of thing-ownership reinforced these common-law property boundaries. The private law of property, property theory, and constitutional decisionmaking aligned to police boundaries.

However, the recent intersection of the new bundle metaphor with the old commons/private dichotomy has created an asymmetry in property theory. To overcome tragedies of the commons, regulations uncontroversially abolish valuable use-rights. But similar regulations that would overcome tragedies of the anticommons now prove more controversial, particularly for the Supreme Court. If the Court were to recognize the boundary principle in the private law and to update its understanding of property theory, perhaps its takings jurisprudence would be better than "a secret code that only a momentary majority of the Court is able to understand."¹⁸⁵ Valuable rights to exclude, like rights to use, should not necessarily be viewed as private property, despite the direction the Court has been taking recently.

IV. CONSTITUTIONAL STRUGGLES OVER PROPERTY BOUNDARIES

To the extent the Court's takings jurisprudence is informed by utilitarian concerns, recent cases are paradoxical: They undermine the usefulness of private property as an economic institution and distinct constitutional category. By highlighting the economic costs of the Court's asymmetric approach to fragmented ownership, this Part encourages the

185. See Heller & Krier, *supra* note 3, at 997 (abstract). As a string cite in every law review takings discussion invariably and colorfully points out, the Court has made this area of law a mess. See, e.g., John A. Humbach, *A Unifying Theory for the Just Compensation Cases*, 34 RUTGERS L. REV. 243, 244 (1982) ("a farrago of fumbblings which have suffered too long from a surfeit of deficient theories"); Saul Levmore, *Takings, Torts, and Special Interests*, 77 VA. L. REV. 1333, 1333 & n.1 (1991) ("one of the most frustrating areas of law"); Jed Rubenfeld, *Usings*, 102 YALE L.J. 1077, 1078 (1993) ("engulfed in confusion"); Joseph L. Sax, *Takings, Private Property and Public Rights*, 81 YALE L.J. 149, 149 (1971) ("resistant to analytical efforts"). The organizing principle for this ubiquitous cite remains elusive: friends, the famous, or just pithy quotations? Is there a market to provide quotable quips, like the advertising blurbs from professionally enthusiastic movie reviewers?

Court to make explicit the nonutilitarian values that may be driving its takings jurisprudence.¹⁸⁶

Unlike the private-law tradition, which bounds fragmentation across the property continuum, the Supreme Court fails to grasp the importance of boundaries on the anticommons side. The first three Sections present a novel framework for analyzing takings cases based on whether the Court characterizes a regulation as predominantly affecting a physical thing, legal thing, or legal relation. The Court's jurisprudence suggests this tripartite framework, which in turn tracks private law and property theory approaches to fragmented ownership. While the following discussion categorizes cases according to the Court's primary emphasis and tone, the cases nevertheless overlap; any single case potentially could be recast to fit into any of the three categories. The final Section explores some preliminary issues that the Court might consider as it constitutionalizes the boundaries of private property.

A. *Physical Boundaries: From Cable Boxes to Trust Accounts*

1. Loretto

*Loretto v. Teleprompter Manhattan CATV Corp.*¹⁸⁷ is the modern paradigm for analyzing regulations that abolish private ownership of a physical fragment. In *Loretto*, the Court evokes the inchoate intuitions of the thing-ownership metaphor to devise the ostensibly simple boundary rule that, when a regulation results in "permanent physical occupation," a taking occurs "without regard to whether the action . . . has only minimal economic impact on the owner."¹⁸⁸ The Court's approach will, I expect, prove unstable because it fails to recognize the necessity of defining the private/anticommons boundary and because of lurking ambiguities in the bundle-of-rights metaphor. Whatever property principle *Loretto* vindicates,

186. As Michelman argues, recent takings cases "are a manifestation of the difficulties faced by the Court in trying to keep faith with American constitutionalism's aspiration to reconcile private property (or, more generally, limited government) with democracy." Frank Michelman, *Takings*, 1987, 88 COLUM. L. REV. 1600, 1625 (1988). This Part uses takings doctrine to explore the law and theory of fragmented ownership, rather than to examine takings law as part of the larger fabric of American constitutionalism or to offer a general theory of takings. For the beginnings of such a theory, see *Heller & Krier*, *supra* note 3. In conversation, Jed Rubenfeld notes that takings scholarship has generally had a property, rather than a constitutional, focus. For an example of a Constitution-oriented approach, see Rubenfeld, *supra* note 185, which reinvigorates the Public Use Clause. See also Gregory S. Alexander, *Ten Years of Takings*, 46 J. LEGAL EDUC. 586, 590 (1996) ("[A]s of 1987, the Takings Clause posed only a very limited threat to the state's regulatory power. Specialists in public law subjects like constitutional law and administrative law could largely afford to ignore it.").

187. 458 U.S. 419 (1982).

188. *Id.* at 434-35.

it does not serve any plausible efficiency goals reflected in the boundary principle.

The underlying technical problem in *Loretto* is that creating a cable television network requires attaching a tiny box to numerous buildings.¹⁸⁹ Multiple landlords can each deny access to relatively low-value physical fragments of box space and thereby prevent creation of a high-value network. While no single building is crucial to the network, the transaction costs of bargaining with and compensating multiple owners could well exceed the private gains from creating the network. A default legal regime that requires bargaining could create an anticommons with too few cable services.

The regulation at issue in *Loretto*¹⁹⁰ responded to this intersection of existing law and technological opportunity. According to the legislature, each tiny physical fragment where the cable was attached to a landlord's building was not, in itself, private property. By overcoming a potential tragedy of the anticommons, the regulation was consistent in form with the ordinary workings of the boundary principle.

In *Loretto*, the Court straddles the two main property metaphors in a way that misses the boundaries implicit in both: "[W]hether the installation is a taking does not depend on whether the volume of space it occupies is bigger than a breadbox."¹⁹¹ The Court invokes the thing-ownership metaphor to argue that, (1) because the "permanent physical occupation" that occurred when *Pumpelly's* whole parcel was flooded in 1872 constituted a taking, therefore, (2) by analogy, the "permanent physical occupation" of enough space on a landlord's building to house a tiny cable box in 1982 is a taking as well.¹⁹² But the *Pumpelly* Court would not have reached the *Loretto* Court's holding, because the earlier Justices used the thing-ownership metaphor to distinguish physical things from physical fragments.

After reforming *Pumpelly's* version of thing-ownership, the *Loretto* Court switched to the expansive *General Motors* version of the bundle metaphor.¹⁹³ Conflating physical fragments with bundles, the *Loretto* Court wrote: "To the extent that the government permanently occupies physical property, it effectively destroys *each* of [the rights in the *General Motors* bundle]."¹⁹⁴ The Court, in a jumble of metaphors, argued that: "[T]he government does not simply take a single 'strand' from the 'bundle' of

189. *Id.* at 421-22.

190. *Id.* at 424.

191. *Id.* at 438 n.16.

192. *Id.* at 427; see also *supra* note 141 (discussing *Pumpelly*).

193. See 458 U.S. at 435 ("Property rights in a physical thing have been described as the rights 'to possess, use and dispose of it.'" (citing *United States v. General Motors*, 323 U.S. 373, 378 (1945))).

194. *Id.*

property rights: it chops through the bundle, taking a slice of every strand.”¹⁹⁵ This physicalist language—“chopping through the bundle”—suggests the means by which the Court is attempting to distinguish this case from ordinary regulations that affect value. What would have been an unprotected physical fragment under the old thing-ownership metaphor becomes a complete, were private property thing in *Loretto*.

The conventional holding that observers take from *Loretto* is that private property has no downward boundary when fragmented into ever smaller physical things.¹⁹⁶ While the dissent noted the “curiously anachronistic” quality of the strained analogy back to *Pumpelly*,¹⁹⁷ the Court’s categorical rule does not mesh with either old or new conceptions of private property.¹⁹⁸ Given modern conceptions of property as value, and given that the value taken by the cable box is *de minimis*,¹⁹⁹ the regulation in *Loretto* probably would not require compensation under Michelman’s utilitarian calculus²⁰⁰ or Bruce Ackerman’s Ordinary Observer test.²⁰¹ Indeed, on remand, after bouncing the case around for years, the New York courts found “just compensation” was not likely to be more than the one dollar that the statute had originally mandated as “reasonable compensation” for the intrusion of the cable box.²⁰²

So what is at stake in this case? If such fragments are protected as private property, and each owner can get a day in court to contest condemnation valuations, then the transaction costs of negotiating with owners and paying trivial amounts of compensation could deter legislatures from acting to overcome similar tragedies of the anticommons. *Loretto* could deter legislatures from continuing the ordinary common-law process of boundary creation following technological change. Instead of deterring efficient regulation, the Court could have recognized that private property has boundaries on the anticommons side of the continuum and then

195. *Id.*

196. See Rubinfeld, *supra* note 185, at 1084 (stating that *Loretto* “boldly extended the physical-invasion rule”).

197. *Loretto*, 458 U.S. at 442 (Blackmun, J., dissenting).

198. See, e.g., John J. Constonis, *Presumptive and Per Se Takings: A Decisional Model for the Takings Issue*, 58 N.Y.U. L. REV. 465, 529 (1983) (evincing unease with the “anachronistic” and “aberrational” categorical rule in *Loretto*).

199. See *Loretto*, 458 U.S. at 447 (Blackmun, J., dissenting) (“Precisely because the extent to which the government may injure private interests now depends so little on whether or not it has authorized a ‘physical contact,’ the Court has avoided *per se* takings rules resting on outmoded distinctions between physical and nonphysical intrusions.”).

200. In dissent, Justice Blackmun writes that: “[A] takings rule based on such a distinction is inherently suspect because ‘its capacity to distinguish, even crudely, between significant and insignificant losses is too puny to be taken seriously.’” *Id.* at 447 (Blackmun, J., dissenting) (quoting Frank I. Michelman, *Property, Utility, and Fairness: Comments on the Ethical Foundations of “Just Compensation” Law*, 80 HARV. L. REV. 1165, 1227 (1967)).

201. See generally ACKERMAN, *supra* note 22.

202. *Loretto v. Group W. Cable*, 522 N.Y.S.2d 543, 546 (App. Div. 1987); see generally Heller & Krier, *supra* note 3, at 1007-09 (criticizing *Loretto* and offering a better approach).

balanced its competing values more explicitly, just as it ordinarily does on the commons side of the property continuum.

2. Phillips

In a recent case, *Phillips v. Washington Legal Foundation*,²⁰³ the Court extended the *Loretto* analysis by analogy to interest earned on lawyers' trust accounts. Lawyers routinely hold money in trust for clients, and pay over accrued interest to clients when the trust funds are large enough to earn net income after expenses. When the trust amounts are so small (or held for such a short time) that a client would earn no net interest, however, states instruct lawyers to hold those funds in Interest On Lawyers' Trust Accounts (IOLTA). By pooling small accounts, IOLTA produces substantial aggregate income that states use to fund legal services for low-income individuals.²⁰⁴

Like the fragmented property interest in *Loretto*, the interest-earning capacity of small trust accounts has no economic value to the client, but has substantial value when the state aggregates the resource to a more efficient scale of use. Nevertheless, according to the Court,

We have never held that a physical item is not "property" simply because it lacks a positive economic or market value. . . . [P]roperty is more than economic value; it also consists of "the group of rights which the so-called owner exercises in dominion of the physical thing," such "as the right to possess, use and dispose of it."²⁰⁵

The Court makes clear that its conception of private property extends beyond economic value, though this conception makes it difficult to understand how to read the Takings Clause as a whole. If just compensation for taking such private property would be zero, then what is at stake in the case? The dissent raises this question in criticizing the Court for announcing "an essentially abstract proposition."²⁰⁶

The Court appears to be defending the claim that fragments of physical things, or economic interests that can be closely analogized to physical things, have no boundary on the anticommons side of the continuum, regardless of how fragmented they become. Perhaps this position furthers

203. 118 S. Ct. 1925 (1998). See generally Heller & Krier, *supra* note 3, at 1013-22 (discussing the role of *Phillips* in the law of takings).

204. See *id.* at 1928-29; see also Michael A. Heller & James E. Krier, *Making Something out of Nothing: The Law of Takings and Phillips v. Washington Legal Foundation*, 7 SUP. CT. ECON. REV. (forthcoming 1999) (detailing the facts and reasoning of *Phillips*).

205. *Phillips*, 118 S. Ct. at 1933 (citation omitted) (quoting *United States v. General Motors*, 323 U.S. 373, 378 (1945)).

206. *Id.* at 1934 (Souter, J., dissenting).

an implicit liberty interest of owners or deters governments from redefining property too much. But it appears to cut against an efficiency rationale for private property. By deterring the government from achieving economies of scale unavailable to owners of economically valueless fragments, the Court ensures that resources are wasted in a tragedy of the anticommons. Cabining fragmentation of valueless physical things should be an easy task, but proves complex.

B. *Legal Boundaries: From Air Rights to Beach Easements*

The Court's jurisprudence regarding fragments of legal things proves even less coherent and sustainable than *Loretto* and *Phillips*. Margaret Jane Radin has usefully labeled this group of "legal thing" cases under the rubric of "conceptual severance,"²⁰⁷ and judges and scholars have discussed the same question using the related nomenclature of the "denominator problem."²⁰⁸ With legal things, the flawed analogy to thing-ownership is more attenuated. As a result, the Court has even less analytical traction with which to formalize its intuitions and differentiate protected property from unprotected fragments. In considering this problem, the Court has oscillated between equally unsatisfactory ad hoc and formalist approaches to the regulatory abolition of fragments of legal things.

207. As Radin notes:

[Conceptual severance involves] delineating a property interest consisting of just what the government action has removed from the owner, and then asserting that that particular whole thing has been permanently taken. Thus, this strategy hypothetically or conceptually "severs" from the whole bundle of rights just those strands that are interfered with by the regulation, and then hypothetically or conceptually construes those strands in the aggregate as a separate whole thing.

Margaret Jane Radin, *The Liberal Conception of Property: Cross Currents in the Jurisprudence of Takings*, 88 COLUM. L. REV. 1667, 1676 (1988); see also Michelman, *supra* note 186, at 1601 (noting that conceptual severance might also be called "entitlement chopping").

Radin also includes "physical thing" cases such as *Loretto* within her conceptual severance category. See Radin, *supra*, at 1676. I believe this inclusive reading undermines the analytic force of her insight. The Court has a visceral reaction to discrete physical things distinct from its treatment of conceptual severance in the legal thing cases. Conversely, a legal thing case such as *Nollan* could be narrowly read as effecting a form of a "permanent physical occupation." Michelman, *supra*, at 1608 (quoting Lawrence Means, *Motives and Takings: The Nexus Test of Nollan v. California Coastal Commission*, 12 HARV. ENVTL. L. REV. 231, 253-63 (1988)).

208. See, e.g., *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003, 1016 n.7 (1992) (noting that "the rhetorical force of our 'deprivation of all economically feasible use' rule is greater than its precision, since the rule does not make clear the 'property interest' against which the loss of value is to be measured"); *Loveladies Harbor, Inc. v. United States*, 28 F.3d 1171, 1179-82 (Fed. Cir. 1994) (discussing the "Denominator Problem"); Michelman, *supra* note 200, at 1192 (noting that "[t]he difficulty [of determining a diminution in value] is aggravated when the question is raised of how to define the 'particular thing' whose value is to furnish the denominator of the fraction").

1. Penn Central

Often the Court can re-conceive a regulation to eliminate completely a discrete, traditional legal thing from an owner's larger fee simple.²⁰⁹ The ad hoc approach of *Penn Central Transportation Co. v. City of New York*²¹⁰ offered the Court one way to resolve the boundary problem while avoiding the unsatisfying attempt to create a bright-line rule. The question there was whether a regulation took private property when it limited the ability of Penn Central to build above its train station. Are these air rights a distinct legal thing that are completely taken or are they unprotected fragments of a larger thing? If the air rights are themselves private property, then the government may not be able to overcome the tragedy of the commons that results because each owner can destroy historic landmarks. The majority suggested a plethora of ad hoc factors that may be considered to bound property²¹¹ and then rejected the view that the air rights fragments were themselves private property.²¹²

Applying this ad hoc approach allows the Court to call on widely shared popular intuitions about property boundaries that are difficult to reduce to formulas, but that appear reasonably consistent over time.²¹³ On the other hand, critics may argue that the ad hoc approach reduces to the unprincipled claim that fragments are private property only when the Court says so.²¹⁴ However, cases since *Penn Central* have moved away from "ad hocery"²¹⁵ and vague standards back toward bright-line rules that purport to avoid policymaking. As Michelman writes:

Permanent physical occupation, total abrogation of the right to pass on property, denial of economic viability—all of these may be regarded as judicial devices for putting some kind of stop to the

209. For example, in *United States v. Causby*, 328 U.S. 256 (1946), the Court characterized low-level overflights not as physical occupation by military planes of the farmer's land, but as a taking of an easement in air above. See also *Portsmouth Harbor Land & Hotel v. United States*, 260 U.S. 327 (1922).

210. 438 U.S. 104 (1978).

211. See *id.* at 124-26.

212. Compare *id.* at 130 ("Taking" jurisprudence does not divide a single parcel into discrete segments and attempt to determine whether rights in a particular segment have been entirely abrogated."), with *id.* at 142 (Rehnquist, J., dissenting) ("[T]he Court has frequently emphasized that the term 'property' as used in the Taking Clause includes the entire 'group of rights inhering in the citizen's [ownership].'" (quoting *United States v. General Motors*, 323 U.S. 373 (1945))).

213. See Levmore, *supra* note 185, at 1333 n.1 ("[L]arge parts of takings law may be predictable in the sense that experienced observers will know whether a particular governmental intervention is or is not likely to cause courts to require that the government compensate burdened parties.").

214. See Michelman, *supra* note 186, at 1626 (characterizing Richard Epstein's view of ad hoc reasoning to be "usurping democracy as we fall into the hands of unbridled judicial power.").

215. Susan Rose-Ackerman, *Against Ad Hocery: A Comment on Michelman*, 88 COLUM. L. REV. 1697 (1988).

denaturalization and disintegration of property. They are formulas having both the feel of legality and the feel of resonance with common understanding of what property at the core is all about.²¹⁶

While the Court's approach to evaluating fragments of legal things may have "the feel of legality," the new bright-line rules also cut off an important avenue for bounding fragmentation, and therefore, they paradoxically increase rather than decrease the "denaturalization and disintegration" of property.

2. Nollan

*Nollan v. California Coastal Commission*²¹⁷ is an example of the Court's more recent approach to analyzing regulations and government actions that abolish fragments of legal things from a bundle of rights. In exchange for permission to rebuild his beach bungalow, Nollan was required to cede what the Court termed an "easement" to allow the public to pass along his private beach.²¹⁸ The right to pass along the beach was conceptualized as a complete legal thing, a lateral easement that had been completely taken.

Alternatively, continued private ownership of the beach easement could have been viewed as creating a tragedy of the anticommons, with each owner blocking the optimal social level of use of beaches valued now for beachcombing rather than for hauling out fish. For example, some state courts have found that, under state public trust or customary rights doctrines, the public holds an easement to cross along dry sand beaches.²¹⁹ Had California found such a public easement to exist generally under state law, that legal thing would have trumped every beachfront owner's takings claim, including Nollan's. Under such a regime, the easement would have never been purchased by the landowner; beachfront access would be a separate, state-owned legal interest. The conclusory labeling of Nollan's lateral easement as a complete legal thing owned by him perhaps reflects concern with the way Nollan was singled out by the state, rather than

216. Michelman, *supra* note 186, at 1628.

217. 483 U.S. 825 (1987).

218. *Id.* at 841, 842 ("California is free to advance its 'comprehensive program,' if it wishes, by using its power of eminent domain for this 'public purpose,' but if it wants an easement across the Nollans' property, it must pay for it." (citation omitted)).

219. See, e.g., *Matthews v. Bay Head Improvement Ass'n*, 471 A.2d 355 (N.J. 1984); see also David J. Bederman, *The Curious Resurrection of Custom: Beach Access and Judicial Takings*, 96 COLUM. L. REV. 1375, 1417 (1996) ("Oregon is generally credited with resuscitating the doctrine of customary easements as applied to public rights of access to the beach."); Joseph L. Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*, 68 MICH. L. REV. 471 (1970).

anything intrinsic about lateral easements. The Court's formal approach inadvertently obscures the boundaries of property.²²⁰

*Keystone Bituminous Coal Association v. DeBenedictis*²²¹ considers the same class of issue—whether the “support estate” in a physical pillar of coal is on the private or anticommons property side of the boundary—and decides the ad hoc factors cut against a finding of private property.²²² *Keystone* recapitulates the same debate that took place sixty-five years earlier in *Pennsylvania Coal v. Mahon*²²³ but comes to the opposite result. Similarly, in *First English Evangelical Lutheran Church v. County of Los Angeles*,²²⁴ the Court asks whether the period during which the city forbade the church from rebuilding should be characterized as a discrete “lease” or as a part of the larger ownership bundle.²²⁵

In *Nollan*, *Keystone*, and *First English*, the Court dealt unpersuasively with the issue of whether a regulation impermissibly took a complete legal thing or only a fragment of a larger legal thing. It is difficult to imagine how the Court will create a sustainable, formal approach that relies on distinguishing among protected legal things and unprotected fragments, particularly when the test turns so transparently on linguistic framing rather than on explicit tradeoffs among competing values. Every regulation can be cast as the complete taking of some “legal thing,” characterized perhaps as an easement, servitude, or lease.²²⁶ When is a legal thing salient? What legal

220. As an aside, I remain agnostic about whether the government should have to compensate a beachfront owner like *Nollan*. There are two distinct issues to consider. First, does fragmentation create a beachcomber's tragedy of the anticommons? Here it appears the answer is yes. Second, should the government pay compensation if it abolishes the offending property right fragments? Some states find customary rights or public trust doctrines that work their formalistic magic to clear the beachcomber's path; other states find that if the public wants access, it must pay for the right. The split in state law suggests why *Nollan* presents a close issue. My intention is to show that the one-way ratchet of fragmentation may impose hidden costs on society and that recognizing property boundaries can help focus discussion on the competing social values at stake. By contrast, the *Nollan* Court's labeling exercise does not advance the argument or provide much guidance for future close cases.

221. 480 U.S. 470 (1987).

222. Compare *id.* at 498 (“The 27 million tons of coal do not constitute a separate segment of property for takings law purposes.”), with *id.* at 517 (Rehnquist, J., dissenting) (“There is no question that this coal is an identifiable and separable property interest.”).

223. 260 U.S. 393 (1922). Compare *id.* at 414 (“[The regulation] purports to abolish what is recognized . . . as an estate in land . . .”), with *id.* at 419 (Brandeis, J., dissenting) (“The rights of an owner as against the public are not increased by dividing the interests in his property into surface and subsoil.”).

224. 482 U.S. 304 (1987). This case is perhaps better read more narrowly as one concerning takings remedies than as one expanding the boundaries of legal things.

225. Compare *id.* at 319 (1987) (conceptually severing a temporary regulation into a taking of a term of years), with *id.* at 334-35, (Stevens, J., dissenting) (objecting to a finding of a temporary taking).

226. Commenting on Radin's idea of conceptual severance, William A. Fischel notes:

An important implication of such a conception is . . . the identification for judicial protection of every stick in the bundle of property rights or, in economists' jargon, every differentiable term of the property rights function. A regulatory burden on one

things are on the private property side of the boundary? The formalistic approach of labeling fragmented legal things “private property” fails to create defensible property boundaries and appears likely to dissolve back into ad hocery.²²⁷

C. *Relational Boundaries: From Sale to Devise*

If private property is a bundle of legal relations, then a bare legal relation must be something less. But what is it? The Court’s jurisprudence becomes most perplexing when it moves to policing fragmentation of legal relations, a distinct line of cases that scholars have not previously isolated. As several Justices have recognized, the Court’s decisions in these cases are flatly incompatible with each other. On a deeper level, to avoid recognizing the boundaries of private property, the Court has instead embarked on a hopeless task by attempting to single out key legal relations.

1. *Andrus*

The back-to-back 1979 cases of *Andrus v. Allard*²²⁸ and *Kaiser Aetna v. United States*²²⁹ introduce the debate over bare legal relations and the difficulty of finding the boundary between private and anticommons property. *Andrus* rejects the idea that a single legal relation, the “right to sell,” is itself private property,²³⁰ while *Kaiser Aetna* protects the bare “right to exclude.”²³¹ All legal relations are equal, but the Court’s jurisprudence suggests that some legal relations are more equal than others.

In *Andrus*, a regulation banned the sale of already-collected eagle feathers as part of a scheme to help protect living eagles and avoid a

aspect of a parcel, such as a restraint on alienation or withdrawal of air rights, rises automatically to a full taking of property under conceptual severance.

William A. Fischel, *Introduction: Utilitarian Balancing and Formalism in Takings*, 88 COLUM. L. REV. 1581, 1592 (1988).

227. As Michelman observes, “the recent outcroppings of formality [are] not . . . harbingers of a possible second coming of the liberal conception in American constitutional law, but symptoms of the historical impossibility of consummating such an event.” Michelman, *supra* note 186, at 1625.

228. 444 U.S. 51 (1979).

229. 444 U.S. 164 (1979). The dispute in this case arose after Kaiser Aetna dredged its inland pond and connected it to navigable waters. The government then argued that these improvements made the pond itself navigable and therefore created a public right of access. *See id.* at 168. But for its subsequent and repeated use by the Court as a legal relations case, *Kaiser Aetna* could more naturally fit under the physical thing or legal thing categories in my framework: “[T]he imposition of the navigational servitude in this context will result in an *actual physical invasion* of the privately owned marina. And even if the Government physically invades only an *easement* in property, it must nonetheless pay just compensation.” *Id.* at 180 (emphases added) (citations omitted).

230. *See Andrus*, 444 U.S. at 67-68.

231. *Kaiser Aetna*, 444 U.S. at 179-80.

tragedy of the commons.²³² The effect of taking the “right to sell” strand was to diminish the value of existing eagle feathers, even though the owners retained the right to exclude, possess, transport, devise, or donate their feathers.²³³ The Court held that “the denial of one traditional property right does not always amount to a taking. At least where an owner possesses a full ‘bundle’ of property rights, the destruction of one ‘strand’ of the bundle is not a taking, because the aggregate must be viewed in its entirety.”²³⁴ *Andrus* could be read to stand for the proposition that particular nonphysical fragments of legal relations are not private property.²³⁵ This position seems necessary if the government is to have the power to avoid a tragedy of the commons (and protect eagles).

Kaiser Aetna, in which the federal government claimed a navigation easement in a privately-dredged marina, represents the opposite view. While the facts of the case seem to refer to the fragmenting of legal things, *Kaiser Aetna* has become the beachhead for eliminating the boundaries of nonphysical legal relations at the anticommons end of the property continuum. The case is often cited for the proposition that “the ‘right to exclude,’ so universally held to be a fundamental element of the property right, falls within this category of interests that the Government cannot take without compensation.”²³⁶ This is an odd statement, relying on questionable authority.²³⁷

It is difficult to imagine how the Court will be able to tease out which relations form the core of private property and which can be regulated without implicating the Takings Clause. Private property undeniably exists when some of the standard incidents are missing,²³⁸ even the “right to

232. See *Andrus*, 444 U.S. at 58.

233. See *id.* at 66.

234. *Id.* at 65-66. In *Andrus*, as in *Lucas*, when the Court speaks of key “traditional” legal relations, this is a jurisprudence of recent vintage.

235. The *Lucas* Court suggests that it can distinguish *Andrus* on the grounds that regulation of personal property receives less Takings Clause protection than real property. See *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003, 1028-29 (1992).

236. *Kaiser Aetna*, 444 U.S. at 179-80 (citation omitted). As an aside, the case may have come out differently had the Court been reviewing a decision finding a navigational servitude under state law. Cf. *PruneYard Shopping Ctr. v. Robbins*, 447 U.S. 74 (1980) (upholding a state constitutional requirement that prevents shopping center owners from excluding picketers).

237. The Court ignores the usual sources found in state law. See Stephen J. Massey, Note, *Justice Rehnquist's Theory of Property*, 93 YALE L.J. 541, 547-48 (1984). (arguing that the assertion of the universality of a “right to exclude” is inconsistent with the Court’s “usual insistence that property claims must be established by reference to positive state law”). Instead, the Court cites to two appellate decisions, *United States v. Pueblo of San Ildefonso*, 513 F.2d 1383, 1394 (Ct. Cl. 1975), and *United States v. Lutz*, 295 F.2d 736, 740 (5th Cir. 1961), and to the less sweeping statement in Justice Brandeis’s dissent in *International News Service v. Associated Press* that “[a]n essential element of individual property is the legal right to exclude others from enjoying it.” 248 U.S. 215, 250 (1918) (Brandeis, J., dissenting). See *Kaiser Aetna*, 444 U.S. at 180 n.11.

238. See *Heller*, *supra* note 8, at 663-64 & n.192.

exclude.”²³⁹ Scholars have challenged the presence of one or another of the incidents of property in the core list.²⁴⁰ For example, in contrast with the Court’s position, Honoré omitted the “right to exclude” from his list of standard incidents of ownership and criticized theories of property that focus too much on exclusion.²⁴¹ On the other hand, he did include the “right to the capital” as a key incident.²⁴² While no scholar has a formal status as an arbiter of core rights, Honoré’s approach, and the criticism it has engendered, calls the reasoning in *Andrus* and *Kaiser Aetna* into question.

The Court’s hunt for key legal relations is hopeless. It is an attempt to formalize the distinction between private and nonprivate property along a non-salient dimension. The boundary exists at the point where a regulation overcomes a salient anticommons tragedy, a practical boundary that requires attention to competing social and political values.²⁴³ Private law routinely recognizes and attempts to define this boundary in practice, but the Court’s search for key relations denies it in principle.

2. Hodel

Hodel v. Irving,²⁴⁴ and its companion case *Babbitt v. Youpee*,²⁴⁵ are at once a natural continuation of the Court’s hunt for key relations and a worrying departure from previous cases. Though little discussed by legal scholars, these two cases represent striking instances where the Court found that a bare, nonphysical legal relation can be private property.²⁴⁶ The Court’s unanimous decision in *Hodel* belies the case’s difficulty. A review

239. See, e.g., *State v. Shack*, 277 A.2d 369 (N.J. 1971) (holding that farmer-employers do not have the right to exclude aid agencies from coming onto land to assist migrant workers). As early as *Village of Euclid v. Ambler Realty*, 272 U.S. 365 (1926), the classic case upholding comprehensive zoning, the Court held that many sticks can be removed from the bundle without that constituting a taking of private property.

240. See Heller, *supra* note 8, at 663-64 (discussing the debate).

241. A.M. Honoré, *Ownership*, in OXFORD ESSAYS IN JURISPRUDENCE 107, 113 (A.G. Guest ed., 1961) (defending his approach as “an attempt to redress the balance” in property theory and discussing exclusion as part of a right to possess); see also Massey, *supra* note 237, at 547-48 & n.42 (discussing the contradiction between the Court’s holding and Honoré’s theory).

242. Honoré, *supra* note 241, at 113.

243. See Joseph William Singer & Jack M. Beermann, *The Social Origins of Property*, 6 CAN. J.L. & JURIS. 217, 220 (1993) (arguing that “[r]ather than asking whether a particular right constitutes a core strand in the traditional bundle of property rights, the Court should more forthrightly focus on [the social aspects of property]”).

244. 481 U.S. 704 (1987). For an analysis of *Hodel*, see Ronald Chester, *Is the Right To Devise Property Constitutionally Protected?: The Strange Case of Hodel v. Irving*, 24 SW. U. L. REV. 1195 (1995).

245. 519 U.S. 234 (1997). The underlying factual issues are the same in *Hodel* and *Babbitt*.

246. These cases can be framed as comprising two distinct kinds of fragmentation. The facts predominantly concern the fragmentation of Native American allotment land into overlapping low-value tenancies-in-commons, that is, fragmentation into small *legal things*. The Court’s analysis, however, focuses on fragmentation of *legal relations*, that is, whether Congress can, in certain circumstances, eliminate the right to devise from the bundle of rights.

of drafts of the decision and internal Court correspondence, available in the public papers of Justice Marshall, reveals that a split Court initially decided to come out on other grounds and wrestled for months with a range of competing views.²⁴⁷

Hodel and *Babbitt* graphically illustrate how regulatory mistakes that defeat the boundary principle can create anticommons property,²⁴⁸ and how difficult it is subsequently to rebundle those property fragments. In the 1880s, Congress enacted a series of Land Acts that broke up Native American reservations and allotted communal lands to individual Native Americans.²⁴⁹ In order to protect Native Americans from white settlers, the lands were held in trust by the United States and "often could not be alienated or partitioned."²⁵⁰ In practice, land could be transferred only through devise or intestacy.²⁵¹ As the Court noted in *Hodel*:

The policy of allotment of Indian lands quickly proved disastrous for the Indians. . . . The failure of the allotment program became ever clearer as successive generations came to hold the allotted lands. . . . Because the land was held in trust and often could not be

247. See The Papers of Thurgood Marshall, Box 412 (unpublished manuscripts reproduced from the collections of the Library of Congress, on file with author). The draft opinion circulated on Nov. 3, 1986 by Justice Stevens would have held section 207 invalid on due process grounds, based on the reasoning in *Texaco v. Short*, 454 U.S. 516 (1982). This approach gathered little support and elicited draft concurrences from Justices O'Connor and Scalia, see Memorandum from Justice O'Connor to Justice Stevens (Nov. 3, 1986) (on file with author) ("Your draft opinion in this case goes off on a ground not raised by the parties . . ."); O'Connor draft concurrence, (Mar. 11, 1987); Memorandum from Justice Scalia to Justice Stevens (Nov. 4, 1986) (on file with author) ("I share Sandra's concerns . . .").

Initially, Justices Powell and Rehnquist were inclined to find that section 207 was not a taking. As Justice Powell wrote:

At Conference I was tentatively inclined to [find section 207 not to be a taking].

A clear majority at Conference voted to affirm, but there was considerable diversity of opinion as to the basis of the Court's decision. Letters from Sandra and Nino indicate that differences continue to exist.

As I am not at rest, I will await further writing before deciding what to do.

Memorandum from Justice Powell to Justice Stevens (Nov. 5, 1986) (on file with author); see also Memorandum from Justice Powell to Chief Justice Rehnquist (Feb. 19, 1987) (on file with author); Memorandum from Justice Powell to Justice Scalia (Feb. 26, 1987) (on file with author); Memorandum from Chief Justice Rehnquist to Justice Scalia (Mar. 3, 1987) (on file with author).

Justices Rehnquist and Powell signed on first to Justice Scalia's concurrence and then, in April 1987, to Justice O'Connor's draft majority opinion. In May 1987, Justice Scalia also signed on after Justice O'Connor toned down references to, and reliance on, *Andrus*.

248. See *Heller*, *supra* note 8, at 685-87.

249. See FELIX COHEN, HANDBOOK OF FEDERAL INDIAN LAW 615-16 (1982 ed.) ("[A]llotment is a term of art in Indian law, describing either a parcel of land owned by the United States in trust for an Indian ('trust' allotment) or owned by an Indian subject to restriction on alienation in favor of the United States or its officials ('restricted fee' allotment)."); *Heller* *supra* note 8, at 685 (noting that individuals received 160 acres and heads of households received 320 acres);

250. *Hodel*, 481 U.S. 704, 707 (1987).

251. See *id.* Here the terms of the trust operated to create an anticommons in contradiction to the usual role of the trust as an anti-fragmentation mechanism.

alienated or partitioned, the fractionation problem grew and grew over time.²⁵²

Reforms finally ended further allotment, but they could not solve the problem of the millions of acres that already had been allotted and continued to fractionate.²⁵³ By the 1980s, according to the Court, the average tract in one region had 196 owners and the average owner had undivided interests in fourteen tracts.²⁵⁴ The Court noted that the fractionation had become “extraordinary”²⁵⁵ by the time Congress passed the 1983 Indian Land Consolidation Act.²⁵⁶ Section 207 of this Act began consolidating these overly fractionated cotenancies by providing for low-value allotment interests to escheat to the tribe upon the owner’s death. In analyzing the regulation, the Court followed the opening it had created in *Andrus* and *Kaiser Aetna* and framed the question as whether the right to devise a fractionated interest in undivided allotment land is itself private

252. *Id.* at 704. As early as 1928, Congress realized that the program was not working and “[g]ood, potentially productive, land was allowed to lie fallow, amidst great poverty, because of the difficulties of managing property held in this manner.” *Id.* at 708. In trying to reform the allotment program in 1934, one Congressman noted:

[T]he administrative costs become incredible. . . . On allotted reservations, numerous cases exist where the shares of each individual heir from lease money may be 1 cent a month The Indians and the Indian Service personnel are thus trapped in a meaningless system of minute partition in which all thought of the possible use of land to satisfy human needs is lost in a mathematical haze of bookkeeping.

Id. (quoting 78 CONG. REC. 11,728 (1934) (statement of Rep. Howard)).

253. See *Hodel*, 481 U.S. at 708; see also John H. Leavitt, *Hodel v. Irving: The Supreme Court’s Emerging Takings Analysis—A Question of How Many Pumpkin Seeds per Acre*, 18 ENVTL. L. 597, 612 (1988) (“Fractionalization creates an enormous administrative burden for the BIA.”); Suzanne S. Schmid, Comment, *Escheat of Indian Land as a Fifth Amendment Taking in Hodel v. Irving: A New Approach to Inheritance?*, 43 U. MIAMI L. REV. 739, 741-42 (1989) (“The fractionation of individually owned Indian trust or restricted land represents one of the outstanding problems in Indian law.”).

254. See *Hodel*, 481 U.S. at 712. One particularly egregious tract, Tract 1305 of 40 acres, produced \$1080 in annual rents, was valued at \$8000, and cost the Bureau of Indian Affairs (BIA) \$17,560 annually to find and pay the 439 owners and manage the property. See *id.* at 713. In 1934, John Collier, Commissioner of Indian Affairs noted:

[T]he Indian Service is forced to expend millions of dollars a year. The expenditure does not and cannot save the land, or conserve the capital accruing from land sales or from rentals. . . . For the Indians the situation is necessarily one of frustration, of impotent discontent. They are forced into the status of a landlord class, yet it is impossible for them to control their own estates; and the estates are insufficient to yield a decent living, and the yield diminishes year by year and finally stops altogether.

Readjustment of Indian Affairs: Hearings on H.R. 7902 of the House Comm. on Indian Affairs, 73d Cong. 117-18 (1934), cited in Petitioner’s Brief at 10, *Babbitt v. Youpee*, 518 U.S. 1050 (1996). On Tract 1305, two-thirds of the owners received less than one dollar in annual rents and one-third received less than a nickel, while the smallest share amounted to a penny once in 177 years. See *Hodel*, 481 U.S. at 713.

255. *Hodel*, 481 U.S. at 712.

256. Pub. L. No. 97-459, tit. II, 96 Stat. 2515, 2517 (1983) (codified as amended at 25 U.S.C. § 2206 (1994)).

property.²⁵⁷ Allotment owners in *Hodel* arguably retained more rights than did the eagle dealers in *Andrus*. In particular, allotment owners “retained full beneficial use of the property during their lifetimes as well as the right to convey it inter vivos.”²⁵⁸ Nevertheless, the Court wrote:

In *Kaiser Aetna* . . . we emphasized that the regulation destroyed “one of the most essential sticks in the bundle of rights that are commonly characterized as property—the right to exclude others.” Similarly, the regulation here amounts to virtually the abrogation of the right to pass on a certain type of property—the small undivided interest—to one’s heirs.²⁵⁹

In 1984, while the *Hodel* litigation was pending, Congress made several changes to section 207 in an attempt to ensure its constitutionality.²⁶⁰ The amended version changed the threshold at which the fractionated interests escheated, but it did not make any substantial change that would affect the Court’s analysis. In *Babbitt*, the Court, with little new analysis, held that Congress’s new attempt was as flawed as the regulation rejected in *Hodel*.²⁶¹ Where does this leave *Andrus*? Three Justices concurred in *Hodel* solely to say *Andrus* is still good law and to limit *Hodel* to its facts;²⁶² another three Justices concurred solely to state the opposite and limit *Andrus* to its facts.²⁶³ There the matter lies.

257. In deciding *Hodel*, the Court could have arrived at the same outcome it reached without creating a new level of protection for bare legal relations. Following *Causby*, the Court could have relied on its “legal thing” jurisprudence. The Court brings this approach to mind when it analogizes section 207 to an old-fashioned remainder interest: “[T]he right to pass on valuable property to one’s heirs is itself a valuable right. Depending on the age of the owner, much or most of the value of the parcel may inhere in this ‘remainder’ interest.” *Hodel*, 481 U.S. at 715. To value this so-called remainder interest, the Court suggests 26 CFR § 20.2031-7(f) (Table A) (1986), which shows that the value of a remainder interest when a life tenant is age 65 is approximately 32% of the whole. See *Hodel*, 481 U.S. at 715.

258. *Hodel*, 481 U.S. at 715.

259. *Id.* at 716.

260. See Indian Land Consolidation Act, 25 U.S.C. § 2206 (1994); *Babbitt v. Youpee*, 519 U.S. 234, 240 (1997) (listing three relevant amendments to section 207).

261. *Babbitt*, 519 U.S. at 235 (“The narrow revisions Congress made to § 207, without benefit of our ruling in *Irving*, do not warrant a disposition different than the one this Court announced and explained in *Irving*.”).

262. The entire concurring opinion of Justice Brennan, joined by Justices Marshall and Blackmun, states:

I find nothing in today’s opinion that would limit *Andrus v. Allard* to its facts. Indeed, largely for reasons discussed by the Court of Appeals, I am of the view that the unique negotiations giving rise to the property rights and expectations at issue here make this case the unusual one. Accordingly, I join the opinion of the Court.

Hodel, 481 U.S. at 718 (Brennan, J., concurring) (citations omitted).

263. Justice Scalia’s entire concurrence, joined by Chief Justice Rehnquist and Justice Powell, reads:

I join the opinion of the Court. I write separately to note that in my view the present statute, insofar as concerns the balance between rights taken and rights left untouched, is indistinguishable from the statute that was at issue in *Andrus v. Allard*. Because that

The Court's review of section 207 starkly shows the point at which the private law and the public law of property diverge. To overcome a tragedy of the anticommons, the private law of property routinely develops anti-fragmentation mechanisms that prevent, and sometimes abolish, valuable privately-held interests.²⁶⁴ *Hodel* represents the most striking case in which the Court has invoked the Takings Clause to defeat the normal operation of legislative reforms that create boundary rules. *Hodel* denies the existence of boundaries; the Court engages in a search for the key strands from the bundle of legal relations that public law will label "private property." In the cause of strengthening private property, the Court instead entrenches a tragedy of the anticommons.

D. *Constitutionalizing the Boundaries*

The task of this Article has been to show that well-functioning private property exists within constantly shifting boundaries on the property continuum. Precisely pinning down those boundaries is a difficult problem that the Supreme Court has begun to address, albeit imperfectly. While the Court easily accepts that private property is bounded by the commons, it misses the anticommons boundary. Instead, the Court is pursuing increasingly baroque and formalistic distinctions to cabin private property. A more sustainable path would recognize that not all valuable privately held property rights are ipso facto private property. This Section notes several issues that the Court could consider in constructing a practical test for bounding private property.²⁶⁵

1. *The Private Law Tradition*

Perhaps the familiar cognitive bias to value things more if they are in hand than in prospect accounts for the divergence between the private and takings law approaches. Assuming this bias exists, the divergence might make sense if private law doctrines *prevent* fragmentation while the few regulations that the Court has considered *abolish* owners' existing fragments. But this cognitive distinction cannot explain the Court's

comparison is determinative of whether there has been a taking, *see* Penn Central Transportation Co. v. New York City; Pennsylvania Coal Co. v. Mahon, in finding a taking today our decision effectively limits Allard to its facts.

Id. at 718 (Scalia, J., concurring) (citations omitted).

264. *See supra* Section II.B.

265. While developing such a practical test is outside the scope of this article, Jim Krier and I venture a new approach to takings law. *See* Heller & Krier, *supra* note 3. Rather than trying to define "private property" as such, our approach responds more directly to the purposes of the Takings Clause. By uncoupling matters and methods of deterrence from matters and methods of distribution, we aim to develop a law of takings more workable than the mess that now exists.

approach. The private law often abolishes existing fragments. Indeed, every government regulation could be framed as abolishing someone's discrete physical thing, legal thing, or legal relation. Framing the issue in terms of initial endowments does not help.

Part II showed that the problem of framing boundaries does not appear so intractable in the private law regardless of whether the doctrine prevents or abolishes a fragment. The private law seems to adjust reasonably easily to social and technological changes that alter the productive scale of resource use on either the commons or anticommons side of the property continuum. As an initial matter, then, the first step toward developing a constitutional boundary test for "private property" is to notice that the private law has a tradition and method that the Court has been undercutting.

A recent D.C. Circuit case, *DirecTV, Inc. v. FCC*,²⁶⁶ illustrates how the courts could use a more subtle understanding of private law and property theory to bound private property. In this case, the FCC divided satellite channels among six broadcasters and told them that if more channels became available in the future, they would receive them on a pro rata basis. Instead, when a block of channels opened up, the FCC decided to auction them as a block to create a new competitor. Although the court decided the case on other grounds, it approved the FCC's anti-fragmentation argument that existing broadcasters should not be able to vindicate their interests in receiving fragments of new satellite capacity. Abolishing the fragments was not a taking of private property. The court wrote:

In order to aggregate sufficient channels to support a viable [satellite] service, these permittees would have to negotiate some form of agreement for joint operations . . . or else work out a system of channel swaps to consolidate assignments. The process necessary in either case is often a time consuming one that is not always successful, which is further complicated by the time required for Commission consideration and approval²⁶⁷

By contrast, denying the fragments to the existing broadcasters and auctioning them to a new competitor in a coherent bundle, "obviate[s] the need for reaggregation and allow[s] the auction winners to proceed directly to acquisition or construction of satellites and operation of their systems without having to negotiate with other permittees or engage in several rounds of administrative processing."²⁶⁸ The court was right to approve the FCC's decision not to create anticommons property; validating the broadcasters' expectations by labeling them as private property would make

266. 110 F.3d 816 (D.C. Cir. 1997).

267. *Id.* at 827 (quoting the FCC order).

268. *Id.* (quoting the FCC order).

little economic sense, nor does it seem necessary on some independent assessment of justice.

2. *Takings v. Due Process Approach*

Kaiser Aetna and *Hodel* are not the only possible approaches to the boundary problem for legal relations. As one alternative, the Court could have relied on its due process jurisprudence,²⁶⁹ an approach Justice Stevens proposed in his early draft of and subsequent concurrence in *Hodel* and his dissent in *Babbitt*.²⁷⁰ *Texaco v. Short*²⁷¹ exemplifies this approach. In *Texaco*, the Court upheld an Indiana statute that retroactively extinguished mineral interests unused for twenty years.²⁷² Similarly, in *United States v. Locke*,²⁷³ the Court analyzed the destruction of a property fragment not through the bundle of rights prism or the Takings Clause, but instead in due process terms: "Legislatures can enact substantive rules of law that treat property as forfeited under conditions that the common law would not consider sufficient to indicate abandonment."²⁷⁴ Perhaps the Court could allow Congress to solve the fractionation problem by an intrusive regulation that escheats fragmented allotment interests to the tribe unless owners

269. "Just compensation" and "due process" as applied to property have had different jurisprudential trajectories. See Massey, *supra* note 237, at 542-45. But see RICHARD A. EPSTEIN, TAKINGS: PRIVATE PROPERTY AND THE POWER OF EMINENT DOMAIN (1985):

Under the proper analysis all rights are, as it were, fundamental. Neither the due process clause nor the takings clause draws any distinction among the types of property interests they protect. All such interests are treated as a piece and all are subject to the unified application of the police power rules.

Id. at 143. In *Eastern Enterprises v. Apfel*, 118 S. Ct. 2131 (1998), a central disagreement among the Justices concerns whether to characterize a regulation as affecting property under the Takings Clause or the Due Process Clause. See Heller & Krier, *supra* note 3, at 1024-25 (noting the Justices' conflicting approaches).

270. Justice Stevens offers a way to review regulations that aim to overcome a tragedy of anticommons property:

The federal interest in minimizing the fractionated ownership of Indian lands—and thereby paving the way to the productive development of their property—is strong enough to justify the legislative remedy created by § 207, provided, of course, that affected owners have adequate notice of the requirements of the law and an adequate opportunity to adjust their affairs to protect against loss.

Babbitt v. Youpee, 519 U.S. 234, 246 (1997) (Stevens, J., dissenting).

271. 454 U.S. 516 (1982).

272. *Id.* at 529. (The state has the power to "condition the retention of a property right upon the performance of an act within a limited period of time. . . . [A]s a result of the failure of the property owner to perform the statutory condition, an interest in fee was deemed as a matter of law to be abandoned and to lapse."); see also *Hodel v. Irving*, 481 U.S. 704, 729 (1987) (Stevens, J., concurring) (citing *Texaco*, 454 U.S. at 529).

273. 471 U.S. 84 (1985).

274. *Id.* at 106 n.15. These rules, however, are only reasonable if they afford sufficient notice to the property owners and a reasonable opportunity to comply. See *id.*

regularly register them.²⁷⁵ Protecting property through the Takings Clause is not the only way to protect valuable, privately held property interests.

This past Term, the Court revisited these fundamental disagreements regarding the nature of private property and the question of when to invoke takings or due process protections. In *Eastern Enterprises v. Apfel*,²⁷⁶ the question presented was whether Eastern's property was taken when Congress retroactively required it to fund health care benefits for retired coal miners. A four-member plurality found that the imposition upon the company of a general obligation to pay money constituted a taking of private property to be analyzed under the Takings Clause.²⁷⁷ A four-member dissent noted that the case involved no "interest in physical or intellectual property, but an ordinary liability to pay money."²⁷⁸ The dissent concluded that "there is no need to torture the Takings Clause to fit this case. The question involved—the potential unfairness of retroactive liability—finds a natural home in the Due Process Clause."²⁷⁹ The dissent found no due process violation.

The pivotal decision is Justice Kennedy's concurrence. Kennedy deemed the Takings Clause inapplicable, but invalidated the retroactive legislation on due process grounds. In criticizing the plurality, Justice Kennedy noted that the "one constant limitation has been that in all of the cases where the regulatory taking analysis has been employed, a specific property right or interest has been at stake."²⁸⁰ Following this statement, Justice Kennedy cited a remarkable, undifferentiated list that mixes together all of the Court's regulatory taking cases.²⁸¹ Together, these cases provide an "outer boundary for application of the regulatory takings rule [that] provides some necessary predictability for governmental entities."²⁸² Justice Kennedy's argument may have been even more persuasive had he separated the regulatory takings cases into the three strands proposed in this Article—physical things, legal things, and legal relations—and explored the boundaries to private property that appear in the private law, as detailed in Part II.

275. For example, it would have been constitutionally uncontroversial for Congress to instruct the BIA to charge owners the administrative costs of managing the trust lands, an amount that would often dwarf the value of the allotment and would lead to massive and rapid abandoning of fragments back to the tribe. It is an oddly formalistic approach that allows the BIA to solve the fractionation problem through burdensome administrative fees, but not by the less intrusive method of eliminating devise of the least-valuable fragments.

276. 118 S. Ct. 2131 (1998).

277. *See id.* at 2153.

278. *Id.* at 2162 (Breyer, J., dissenting).

279. *Id.* at 2163 (Breyer, J., dissenting).

280. *Id.* at 2155 (Kennedy, J., concurring in the judgment and dissenting in part).

281. *See id.*

282. *Id.*

3. *The Scale of Private Property*

A final, more subtle problem, is how to determine when a salient tragedy of the anticommons exists. Property often functions well as private property on one scale of aggregation, but as an anticommons on another. Indeed, this problem underlies and justifies the routine decision to use eminent domain where private property is reasonably well functioning, is more valuable in another scale of use, and cannot be collected for that use because of holdouts by dispersed owners. In these cases, there may be a tragedy of the anticommons at the level of the more valuable use, but there is no debate that the fragments are each private property protected under the Constitution.

To make the private/anticommons boundary salient, then, the Court needs to be able to distinguish the anticommons fragments in *Hodel* from the private property parcels in a case such as *Poletown Neighborhood Council v. City of Detroit*.²⁸³ In *Poletown*, each house functioned as private property at the family level. But at the community level, fragmented private ownership appeared to function as an anticommons, where each owner could block General Motors from achieving what it claimed would be the highest valued use of the land as new factory space. The lots in *Poletown* were put to ordinary use as private homes, so they should be considered as private property regardless of whether fragmented ownership creates a tragedy of the anticommons at a different scale.²⁸⁴

How is *Hodel* different from *Poletown*? In both cases, owners hold fragments that may be more valuable when bundled into a larger scale. Nevertheless, the two cases may be distinguished along an intuitively-plausible, but still theoretically-preliminary, axis. In *Hodel*, no owner can make ordinary or even minimal productive use of the underlying resource. The fractionated farms lie fallow, though it appears from the record that Native American owners do not prefer this use.²⁸⁵ The interests in *Hodel* have become so fragmented that their economic value derives primarily for their use in blocking others. If the accounting costs of dividing payments were not subsidized by the government, the leases would generate no net revenue. Even if the fragments were to have some residual speculative value, reconstituting them into sole ownership on any ordinary scale of use seems impossible through private bargaining. If the government has to bear

283. 304 N.W.2d 455 (Mich. 1981).

284. *Poletown* may not be an example of a tragedy of the anticommons even at the community level. There was a substantial question whether the switch to factory use improved overall utility because the fair market value system of compensation misses the subjective and community values destroyed by bundling. See JEANIE WYLIE, POLETOWN: COMMUNITY BETRAYED (1989). The resemblance of the case to the English enclosures of Blackstone's time is striking.

285. *Hodel v. Irving*, 481 U.S. 704, 707 (1987).

the transaction costs of aggregating these interests, it may in practice prefer to let the resources remain fragmented and wasted.

By contrast, in *Poletown*, each owner can use each lot in an ordinary, productive way as a single family home, even if each owner also can hold out and block bundling at the community level. More generally, regulations should be able to rescale ownership without being said to have taken private property when ownership fragments do not function productively on an ordinary scale of use. Thus, *Hodel* may have been wrongly decided if, on reflection, it appears that Congress used its standard legislative approach to bounding private property to avoid a salient tragedy of the anticommons. This rationale explains why the legislature need not have compensated the landowners in *Hodel*, but the *Poletown* case presents a compelling need for compensation. Whether compensation is due depends not only on the purpose of the government's activity, but on the nature of the thing lost by the plaintiff.

Determining an "ordinary" scale of use admittedly remains a thorny problem. The gap between popular intuitions about ordinary uses and a workable doctrinal test persists. A task of this Article has been to point out that courts and legislatures should recognize that a salient distinction exists between *Hodel* and *Poletown*. Pinning down the boundary between those and related pairs of cases is perhaps a practical problem for old-fashioned, common-law judges and not a theoretical task at all.

V. CONCLUSION

This Article argues that private property is not a useful analytic concept unless it can be practically bounded. For the most part, fragmentation creates wealth. Self-interest ensures that people usually engage in cost-justified fragmentation of their private property. But governments sometimes create policies with perverse incentives, markets and informal institutions sometimes fail, and people are prone to cognitive biases and strategic behaviors that lead them to fragment resources too much. Over many centuries, legislatures and courts have responded flexibly with anti-fragmentation mechanisms that limit the costs of these failures. The boundary principle is as much at the core of private property as the idea of sole ownership.

Recently, the Supreme Court has begun undermining the benefits of the boundary principle by labeling fragments of physical things, legal things, and legal relations as private property. From an efficiency standpoint, however, not all privately-held property rights should be protected as private property under the Fifth and Fourteenth Amendments. In particular, when resources are wasted in a tragedy of the anticommons, protecting fragments of ownership does not serve the plausible economic goals of a

private property regime. If protecting fragments serves competing values, then the Court should make these values explicit and confront the tradeoffs they engender.

